

COMMERCIAL CAR JOURNAL



FOURTH ANNUAL

HIGHWAY TRANSPORTATION SHOW

THE Editors take pleasure in presenting the COMMERCIAL CAR JOURNAL Fourth Annual Highway Transportation Show. Having assumed the dignity of an institution, this special issue imposes a responsibility which the Editors are only too glad to assume.

The primary purpose of a show issue is, of course, to display as attractively and completely as possible all of the new developments of the truck industry. Readers will find here details of every new development made available in time for publication.

The secondary purpose, as conceived by the Editors, is to inform, instruct and educate fleet operators and, in fact, the entire industry in matters of vital concern to all interested in highway transportation. To accomplish that they present articles on a variety of pertinent subjects, specially selected with the help of the industry's leaders, who also assisted in their preparation.

The Editors are confident that this issue will make the truck industry proud of itself and alert to the dangers that lurk on many sides.

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TRUCK DESCRIPTIONS

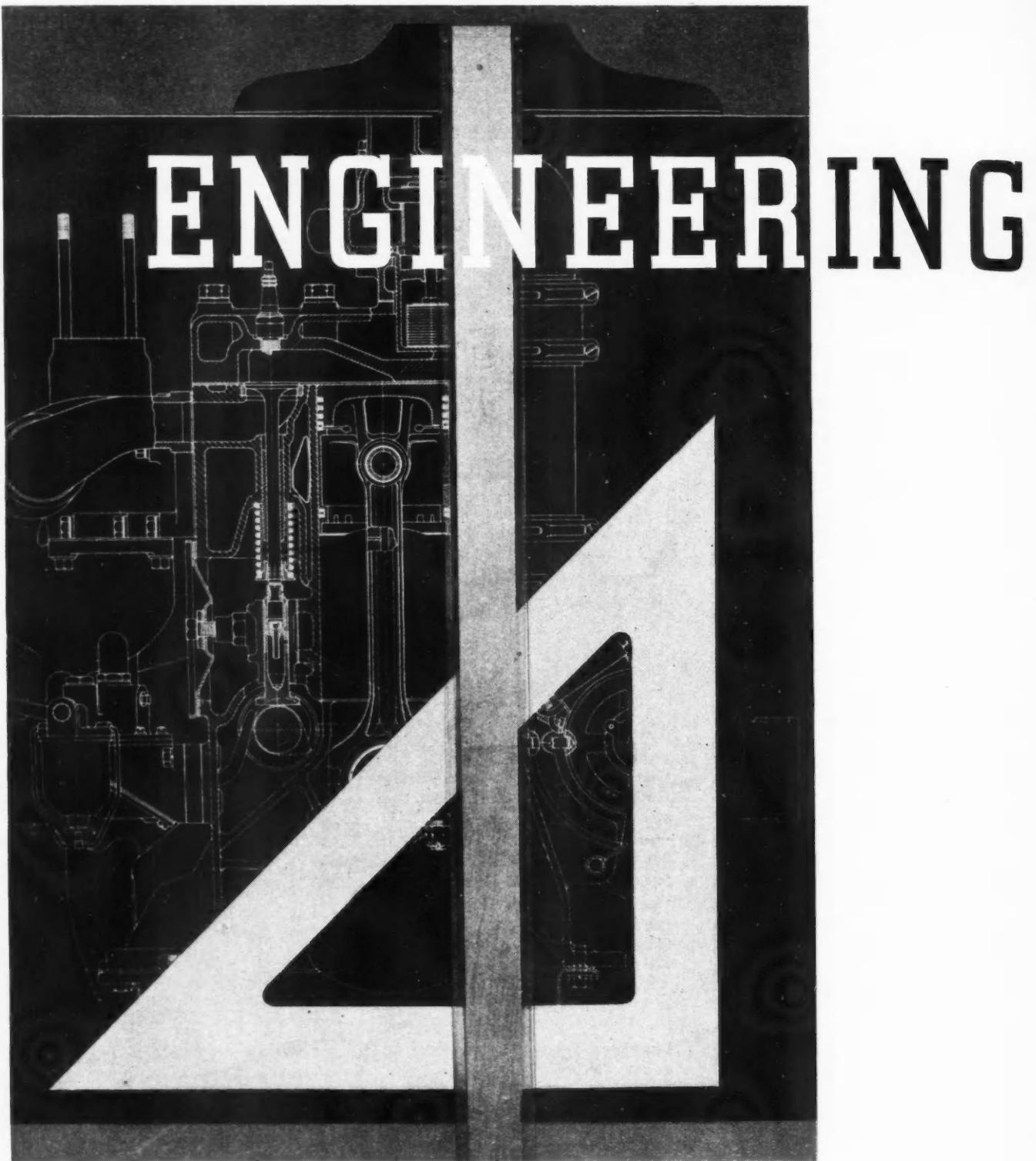
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Sifting the answers of engineers to specific questions and the results of a year's close observation Commercial Car Journal finds that: Engineers feel there is a great deal of room for improvement in the present method of torque conversion. Contemplated improvements would either make shifting easier or eliminate manual shifting entirely. As usual there are several schools of thought and engineers are cautious about selecting a winner. Multi-stop trucks are now in the process of refinement and progress will continue under steady pressure of suggestion and appreciation of the market. Diesels may expect some competition on their economy arguments from propane, butane and spark ignited oil engines. The driver will continue to rate consideration of his comfort from the design department.

If there is to be a "blitzkrieg" on the engineering front you can look for it in the transmission sector. Engineering improvements have a way of requiring time before realization. It just simply does not happen that someone turns up with a brilliant idea that can immediately be put into production. There is always a period of experimentation and development,

FORECAST

then a period of test. In this way only can new ideas and new devices be safely adapted to highway vehicles. However, the relative speed with which any improvement comes to market is dependent upon the need for it, as voiced by truck operators and interpreted by design engineers into terms of what is physically and commercially possible.

At this writing engineers do not seem to be satisfied with the present method of converting engine torque into usable truck ability. Some look for improvement in the ease of shifting of gears, while others feel that manual shifting should be eliminated so that the whole matter of selection can be taken away from the driver, the point being that personal judgment varies, naturally affecting efficiency, while automatic regulation of torque can be adjusted to best advantage.

The present arrangement can be changed by incorporation of the fluid flywheel, fluid torque converter, electrical shifting, straight electrical transmission, or by mechanical shifting. There are several reasons for favoring these new ideas. One that is frequently expressed is the reduction of shock loading to all parts of the drive line. This would make possible the use of lighter drive line parts or at least longer life with less trouble from the drive line parts as they are now.

Another possibility frequently mentioned is that if you take away from the driver the necessity of shifting gears he may be able to develop another skill which in the end will result in moving the load from A to B either a little faster or a little more economically, which after all is what the engineers are striving to do, no

matter how they do it. Selecting one method of improvement over another would be a complicated process. Rather than give one any edge over another by personal connotation it would be more informative to say that listening to the men who are responsible for truck design indicates that the fluid flywheel is perhaps looked upon with the most favor.

All of this is not without opposition. We give the minority leader the floor and this is his report, "Despite the great amount of interest which has been attached to hydraulic torque converters here and abroad, as applied to motor buses, there appears to be nothing at present which gives promise of practicability on trucks. The basic limitations on the hydraulic turbine still remain; namely, progressive loss of efficiency as torque multiplication takes place; the fact that the range of torque multiplication is too far restricted and the fact that a given ratio of torque multiplication involves much more than a proportionate reduction of speed."

This opinion continues, "So far no turbine device has been developed which can approach the efficiency of geared reductions. The chief outlook for hydraulic devices is apparently confined at present to a substitute for the conventional friction clutch. This, of course, is the fluid flywheel which is not to be confused with the hydraulic torque converter. It seems to offer alluring possibilities, particularly in connection with diesel engines, since it is capable of ironing out the comparatively harsh torque characteristics of engines of this type."

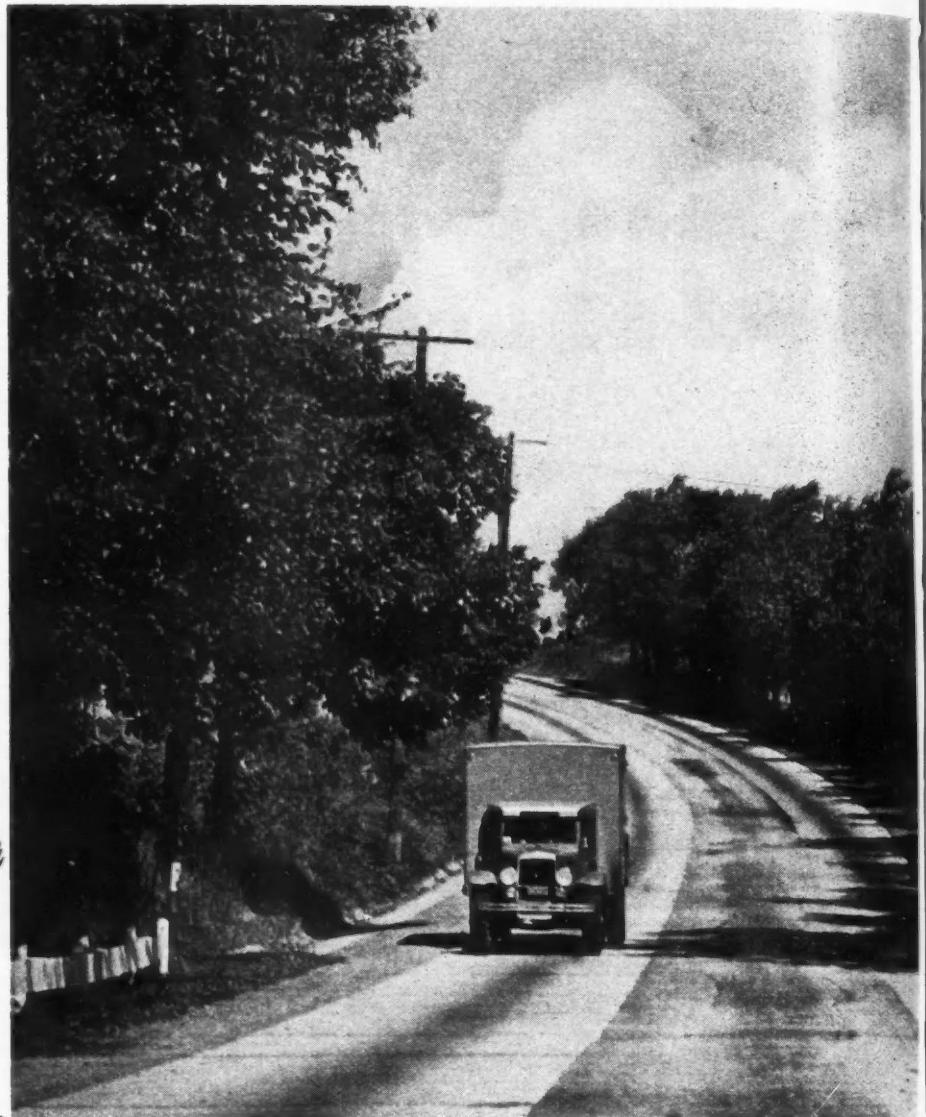
As a result of the emphasis which is being placed on door-to-door and

metropolitan delivery units and the consequent time and attention given to these units by the engineering departments the progress in the next few years will keep pace with the improvements of the last few. Right now there are multi-stop units being manufactured by more truck producers than there were this time last year. Some of them surprised the market by getting into the multi-stop business. This presages keen competition for the sale of this type of vehicle and this competition alone will force progress.

About five years ago COMMERCIAL CAR JOURNAL published an editorial pointing out the possibilities in multi-stop delivery if the industry ever got around to designing a modern, scientific horse and wagon. At the time it did not strike a particularly responsive chord among the engineers' chorus. By this time the tune has already been changed and the new harmony is already manifest in the present product. But this present vehicle does not by any chance represent final thinking on the subject.

There will be more load space for a given wheelbase, and wheelbases will be held down because of the importance of parking and handling in restricted space, of the vehicle doing this type of work. Part of the load space will be gained through better arrangement of units and possibly units better adapted to the multi-stop truck. Driver comfort and convenience will be worked out to better advantage although the driver certainly has no kick coming on present models. The engine horsepower will be held down and, if anything, reduced in some cases, because there is little or no time to be gained by pro-

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Anti-Highway Activities of Railroads and the Sabotaging Effect of Internal

CURRENT THREATS TO

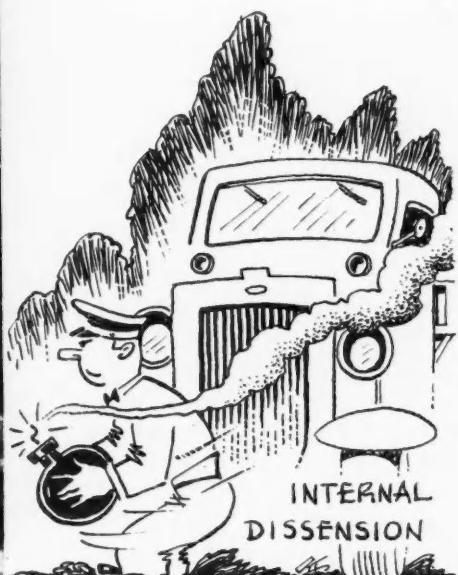
EXPERIENCES in the months of 1939, during which 44 state legislatures were in session, indicate two general conditions which are in fact threats to highway transportation. One of these conditions is the inability, fortunately in only a few instances, of highway user groups to work together. Practically all the losses at the 44 state capitals suffered by highway transportation in the recent legislative sessions can be traced

directly to internal scraps and feuds.

Individuals or organizations in rare instances have assumed a cat and mouse attitude with the result that the highway user in some instances is the loser, either in the enactment of unfavorable legislation or the promulgation of restrictive and unnecessary regulations. However, these instances of internal bickerings are decidedly the exception rather than the rule. Where the highway user

groups and individuals work together their combined strength is almost invulnerable from any point of attack.

The second condition which constitutes a threat to highway transportation is found to exist in the disclosed and generally known source of considerable of the unfavorable highway bills presented and the restrictive regulations requested. This source is the offices and officers of railroad corporations and railroad associa-



Dissension Are Menacing Conditions That Must Be Countered by Highway Users

HIGHWAY TRANSPORTATION

tions. Highway user groups do not request a great deal of legislation at the state capitals. Considerable of their efforts must be expended, necessarily, in opposing measures and activities either by law or by regulation, which, if put into effect, would hamstring highway transportation.

Having now stated the two general threats to highway transportation, it will be well to itemize some—not all—of the specific lines of attack which

are made on highway transportation, either from railroad sources or because of the occasional inability of highway user groups to work together. Not the most important specific threat to highway transportation, but a very prominent one, is the attack now being made on a broad front against private transportation as a whole. This includes highways, waterways, airways and pipelines.

In measures which were consid-

ered by Congress at Washington for months the attack on private transportation took the specific form of an attempt to enact a commodities clause which, if enacted, would have denied those who own their own transportation facilities from hauling their own products to market or bringing back their own supplies. It required long and strenuous efforts at Washington to delete this particular provision from the proposed transportation measure on the Senate side before it was finally introduced.

In the state legislatures the attack on private transportation is not on such a broad front as was the case at Washington. Guerrilla warfare and sniping is more the figure of speech to use in describing the private transportation skirmishes at the state capitals. More taxes by increasing the gasoline and registration fees, or by other unusual imposts designed to be levied upon and collected from privately owned motor vehicles, was a favorite stunt out in the states to limit the natural development of highway transportation. This was aimed particularly at private carriers by truck, but was a threat also to the privately owned automobiles. A favorite cross-fire device against highway transportation was to institute an entangling red tape of regulations involving reports, inspections and compliance on the part of all who owned

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By CHESTER H. GRAY, Director
National Highway Users Conference

THE current campaign to "black out" the trucking industry is a distinct threat to the security of all who have an interest in the development of highway transportation in this country. Nation-wide in scope and potentially devastating in its effects, this anti-truck campaign follows a carefully-laid plan of powerful forces that have a selfish interest in crippling highway transport. The trucking industry has been singled out as the first point of attack because it is considered the most vulnerable. The ultimate objective, there is no doubt, is to shackle ALL highway transportation.

The time has come to stop talking and go into action. The challenge of these forces must be accepted and their assault on the trucking industry defeated. Their chief weapon is public misinformation. To defeat them, highway interests first must wage a counter campaign to enlighten the public. The public must be told the truth, and individual truckmen, shippers, local and state truck associations, manufacturers and suppliers to the industry—in short, all who have an interest in the unimpeded development of highway transportation—must help in this campaign of enlightenment.

The American people, as a whole, are fair-minded. Give them the facts and they will arrive at a fair conclusion. The public now lacks a clear understanding of the industry's importance and, generally speaking, is unaware of the many injustices the industry has suffered.

This disposition on the part of the public for fair dealing may work to motor transportation's disadvantage, however, as long as nothing is done to counteract the anti-highway propaganda which finds its way into every home. A false statement, repeated often, and allowed to go uncontested, eventually is accepted as truth. For example, anti-highway propagandists repeatedly refer to trucks as "unregulated competitors" of the railroads. Thus, editorials appearing in many of our leading newspapers from time to time deplore the "fact" that the railroads are subject to strict regulation by the Interstate Commerce Commission, while the trucks, errone-

WE'VE GOT TO GET TO THE PUBLIC

The man in the street—the voter—must be told the truth about the trucking industry and all who have an interest in highway transportation must help out



By TED V. RODGERS
President, American Trucking Associations, Inc.

ously termed a major competitor, are not subject to such regulation. Few persons who read these editorials know that trucks have been regulated Federally since 1935 and in many states for more than 20 years.

Most truckmen are familiar with the vitally important service that motorized transportation renders to the citizens of this country, and there are plenty of facts and figures to prove that motor carriers pay their way in taxes as well as serve the people in

countless ways that no other transportation agency has yet been able to duplicate. But it is one thing to have these facts and figures available, and something else to present them to the public. This matter of public education can not be taken lightly. The first rule of good salesmanship is that "If you want to sell 'em, you've got to tell 'em." The trucking industry has a great story to tell, and it behooves each and every individual interested in the industry's welfare,



either directly or indirectly, to help get the story across.

The role of the individual truckman must go far beyond paying dues in a local or state trucking association and attending an occasional meeting. If he expects to say in business, he will have to do a lot more. The method adopted by one Pacific Coast trucking company, for example, is an excellent means of telling the industry's story. This company operates trucks throughout

the West. The sides of its truck bodies have been utilized to display messages giving pertinent facts about the industry. These are restricted to short, pointed statements, such as: "The trucking industry employs more people . . . pays more taxes than any other form of transportation." Daily, these messages are brought to the attention of thousands of persons on traveling billboards. (Editor's Note: See detailed article in this issue "Say It With Posters.")

There are, of course, many other ways in which the individual may help. At the moment, however, it is far more important that highway interests be awakened to the simple fact that they are right in the middle of a life or death struggle, and convinced that public enlightenment IS the best line of defense.

This year, for the first time in a decade, the industry survived the legislative season without suffering any serious set-backs of national importance. Defeat on all fronts of anti-truck legislation primarily was due to enlightened public opinion. Legislation was shouted down which might have passed with comparative ease two or three years ago. The enemies of highway transport are finding it increasingly difficult to trick legislatures into enacting laws designed to hamper the trucking industry for the benefit of its competitors. Slowly but surely, it is beginning to dawn upon the citizens generally that every time another restriction is placed on trucks the real damage is suffered by the shippers and consumers of the nation.

Why, then, must the industry further stiffen its defense? There are at least two good reasons. First, the industry's enemies will not be deterred by this year's failures. Instead, the attack will become more vicious. The industry must be prepared to meet it. Second, the statute books of the States are rife with measures that discriminate against the trucking industry. If a program of public education can stop enactment of new anti-truck legislation, it can result in repeal of existing discriminatory statutes.

Above all, highway interests must never lose sight of the fact that they are up against shrewd, calculating and well-organized adversaries. Past as well as present activities of the anti-highway forces show conclusively that their campaign is not haphazard, but has been planned carefully from the very beginning.

Observe, for instance, how they have concentrated their efforts to effect enactment of laws drastically limiting the maximum weight of trucks. Until 1938, there were five

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Say it with POSTERS



BY JOHN YOUELL

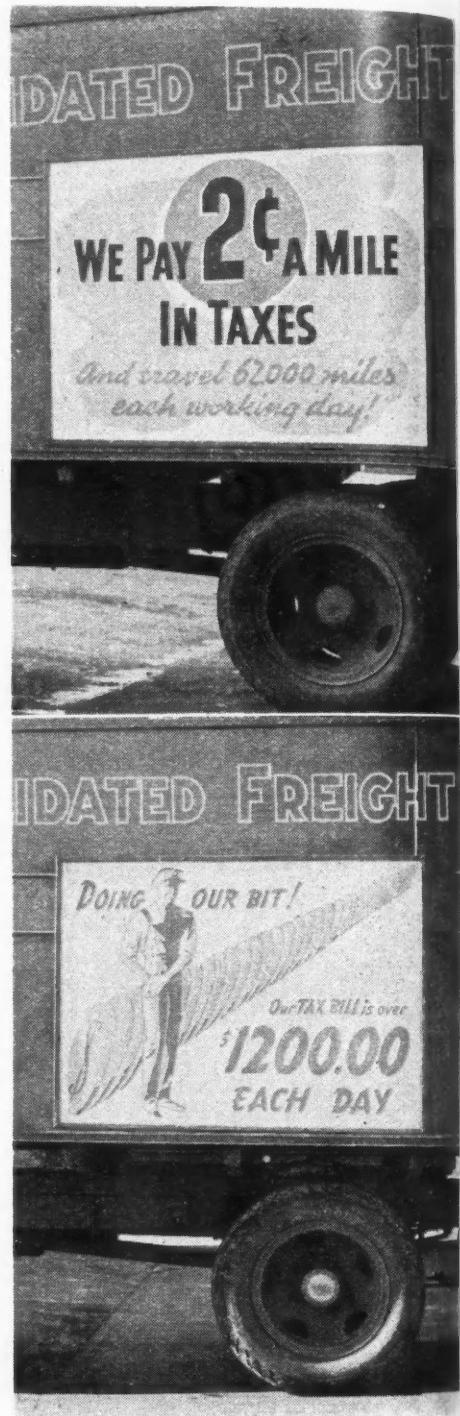
Vice-President, Consolidated
Freightways, Inc., Portland, Ore.

As Ted V. Rodgers, president of the ATA, says in another article in this issue, "We've Got to Get to the Public." There are various ways of getting the story of the truck industry over to the general public. Out in the Pacific Northwest one fleet operator is doing it with posters placed on the sides of his trucks. In this article the practical details of that fleet's poster campaign are revealed. Fleetmen will want to know what it costs. Here's the dope.

INDUSTRY and company advertising signs 48 inches x 60 inches in size have been carried on our 140 delivery trucks for the past year. The program is creating much interest. On one side of the truck we feature some phase of our own service, and on the other side we carry a poster of an industry selling nature. Taxes and employment have been the principal industry items featured so far.

Now we are pointing out just what the industry does for the public in a service way. For example, a current sign says, "Motor freight has speeded up all transportation."

Being carried on city trucks at 57 locations in eight states from California to Minnesota, the signs must be prepared about a month in advance. We have been changing them monthly but hereafter will change



Multi-color posters like these tell

them every six weeks, for it is felt that carrying each message longer, particularly in the metropolitan areas, will make them more effective. The signs are made by the silk screen process and are usually in three or four colors, the same color scheme being used on both sides of the truck. Art work on the layouts costs an average of \$25 a month, and the signs proper come to approximately 30



Consolidated's story—the industry's story—to the public. Posters are changed at intervals, rear painted sign is permanent

cents each or a little over \$180 for each system-wide change. At the larger stations commercial sign posters change the signs at a cost of about 50 cents a truck. At the smaller points we do the posting ourselves.

Poster frames are made of galvanized sheet metal with a sheet steel band an inch wide on the edges. They are fastened to the bodies with

flat-headed bolts. Galvanized metal should be used, for steel will rust from the damp paste, and the signs will immediately discolor. The sign frames cost \$3.19 apiece and are easily removed from equipment that is to be disposed of.

In addition to this part of our program of selling the industry, a program which each commercial vehicle operator should participate in, we

also carry permanent signs on the rear of much of our road equipment—"Truck taxes help pay for highways." Each of our freight bills carries the same message, and envelope stuffers, printed scratch pads, our house organ, and general advertising are all used in Consolidated Freightways' program to do its part in selling the truck industry to the public.



SHAKING its way along the floor of the valley is a narrow roadway. A big truck, tarpaulin cover flapping in the wind, drones toward the intersection ahead. Under its hood, the motor grinds at 40 miles an hour. Its top-heavy square body sways as the vehicle takes the curves.

A man stands at a vantage point overlooking the whole valley. He watches the truck intently as it inches toward the crossing. His head pivots almost imperceptibly.

He does not see the narrow roadway or the truck swaying along at 40. What he sees is a great many-laned one-way highway, teeming with vehicles, most of them commercial; tapered trucks streaking along at uni-

NORMAN BEL GEDDES' MOTOR TRUCK

form speeds of 50, 75 and 100 miles per hour; and an intersection which has become a miracle of traffic engineering!

The spectator with the eyes that look beyond what is spread before them is Norman Bel Geddes, one of America's foremost designers. Having attained fame with his stage sets for the "Miracle," "Dead End" and

other shows, Geddes now is focussing his attention on trucks and passenger cars and highways of the future. Some suggestion of the ideas in his mind may be had from the General Motors' "Futurama" at the New York World's Fair.

"Futurama" is a good name for an exhibit designed by Norman Bel Geddes, for he has been dealing in



ago Geddes predicted that "engineering science will undoubtedly be equal to solving the enormous problems involved in producing a car equal to a speed of 300 miles an hour." People scoffed at that, too. But a few weeks ago an English business man named Cobb set a world land speed record of almost 369 miles an hour!

Geddes has designed many things—stoves and stage sets and steamships and airports and motor vehicles. He is known as one of the highest paid designers in the world. Born in Adrian, Mich., in 1893, he was something of a non-conformist from the start. At an early age he was ejected from school for cartooning the teacher. He left public school when he was in the ninth grade, and then studied art in Cleveland and Chicago. At 20, he was the art director of a leading advertising agency. Shortly thereafter he wrote a play and this led to the designing of the stage sets which made him famous. Gradually his interests shifted to the industrial field in which he now works almost exclusively.

Norman Bel Geddes has said that man has one outstanding failing—"he limits his horizon to what his eyes see."

While Geddes has never set down on paper any detailed design for a commercial highway freight vehicle,

he knows now many of the features which such a design would include. He has studied highway and traffic problems for years, and has designed busses and passenger cars. Only recently, he discussed with the President his comprehensive plan for a national system of super-highways. This plan was drawn up after five years of study.

What about it, then, this truck of the future?

First of all, Geddes thinks that trucks and other commercial vehicles are far ahead of the passenger car from the viewpoint of design. Still, he contends, there is vast room for improvement in the field. Designers, he believes, must learn to think in terms of purpose and form, then real headway will be made. The truck of tomorrow must be functional; it has a duty to perform and its design must be expressive of that duty. The same is true of a modern office building or an electric stove.

Tradition, Geddes argues, is probably the biggest obstacle to efficient design. He is convinced that the motor of the average truck is where it is—at the front—simply because of the horse and wagon precedent. He believes motor designers and manufacturers know the disadvantages of such a practice, but cling to it merely

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FUTURAMA

AS UNFOLDED TO DICK RIEBER

"futures" for about 20 years. In all his designs, he tries to answer the question—What is the ultimate form which this object—whether it be a whole city or an electric iron—will take?

Some visitors to the Futurama wonder where this fellow Geddes gets his fantastic ideas. Fantastic? Maybe. But maybe not, too. Seven years

100-mile-an-hour highways of the future will have more trucks than passenger cars, predicts famous designer, who tells how trucks must be designed for higher speeds

By **WILLIAM H. OTT** (Kraft-Phenix Cheese Corp.),
President, National Council of Private Motor Truck Owners, Inc.

THE plight of the private motor truck owner broadly is the plight of everyone in this country who resists the invasion of his private rights as he understands them—rights that are sacred to him under his conception of democracy and his interpretation of the Constitution.

The private motor truck owner believes in constituted authority. He believes in such regulation as is necessary. He believes in, and substantially supports, various public and private activities in the interest of highway safety. But as the private owner and operator of his own ve-

hicle, carrying his own property therein, he resists classification as a "carrier" and regulation of his commercial vehicle as such, just as strongly as he would resist classification of his passenger automobile as a passenger "carrier."

Of the 4,500,000 motor vehicles registered in the United States, more than 3,800,000 of them (approximately 85 per cent) are privately owned and operated. These private vehicles are owned by individuals, business organizations and farmers—largely by small businessmen. They are mostly small trucks. More

The PLIGHT OF THE PRIVATE MOTOR TRUCK OWNER

He is the target for restrictive legislation with pot-shots being taken at him by bureaucrats, by railroad adherents and by some motor carrier elements, and only organization on a strong national basis will save him



than 90 per cent of them have a rated capacity of 1½ tons or less.

The plight of the private motor truck owner dates back to the time when enterprising businessmen and farmers began to adopt the newer, more economical and more efficient type of transportation, the motor truck. In spite of the fact that the railroads still handle 80 per cent of all freight moving in interstate shipment, the number of privately owned and operated motor trucks has increased 75 per cent since 1920—



and the rapid increase in the use of the more economical and efficient motor truck continues.

Therein lies, probably, the very roots of the plight of the private truck owner. When the depression caused a major financial problem for the railroads, the rapid growth of highway transportation was regarded as a major "menace." Since then there has been an increasing barrage of legislative and other regulatory activities, the effect of which has been to increase operating costs and re-

strict in efficiency, economy and flexibility the operation of all forms of highway transportation, and particularly commercial vehicles.

However, up to 1935 there was no organized resistance by private truck owners to the embarrassing and largely railroad-inspired regulatory legislation, both federal and state. In that year the private motor truck owner was injected into the federal Motor Carrier Act as a "private carrier" without his views being presented by any existing organization

representing the private owners. In that Act, without his knowledge and consent, the private owner of a commercial vehicle became a "private carrier," and under the provisions of that Act (which was designed to regulate bus lines, highway freight operations and other for-hire carriers) the Interstate Commerce Commission was empowered to:

1. Regulate common carriers by motor vehicle and establish reasonable requirements with respect to

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WE in this country want no part of war. The devastating toll of life, limb and property and the crippling of the economic machinery is shared by winner and loser alike. But as long as we have war-makers with their greed for power and possessions, even peace loving nations must be prepared.

It is apparent that this country is determined to make every effort to stay out of the current conflict in Europe, but to build up our defenses as a means of solidifying our national security.

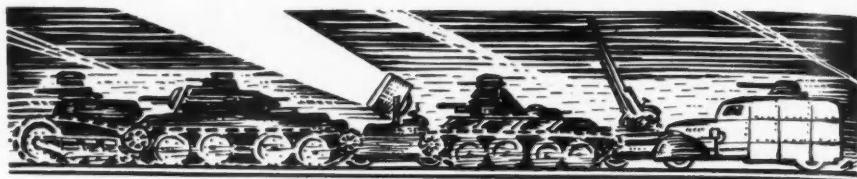
This does not mean that we should militarize the country and hand the youth guns and hand-grenades and work them up to a state of frenzy with propaganda. But it does mean that we must build up our strength much in the same way as the big, strong silent lad whom the school bully has, from sad experience, long since learned not to tackle.

One of the strongest and most vital fibers in our national security is found in the 3,000,000 miles of highways—1,000,000 of them surfaced—that honeycomb the nation, plus the mechanized motor transport that the War Department has developed out of trial and error experiment since the World War.

The World War found motor truck engineering in its experimental stages. It found highways in the



By ARTHUR C. BUTLER
Manager, Motor Truck Department,
Automobile Manufacturers Association



3,000,000 *Miles* OF SECURITY

Military requirements dictate construction of roads

same state. But despite the crudeness of the vehicles of those days and the inadequacy of the highways, there is no doubt whatsoever as to the essential part they played in the Allied victory, or in other wars.

One has only to read the daily news accounts of the lightning-like strides of the German troops into Poland to learn the importance of efficiently manned motorized equipment in modern warfare. The same applies to the French advance into German territory.

Motor transportation with its multi-flexible units presents more of a problem to air raiders, artillery, and other weapons of enemy forces. Warships present larger targets, and, as a matter of fact, can be rendered ineffective by mined waters, bottleneck channels and submarine operations. Railroads operating on fixed tracks through large terminals and operating mass transportation service, can be put out of commission more readily than the thousands of

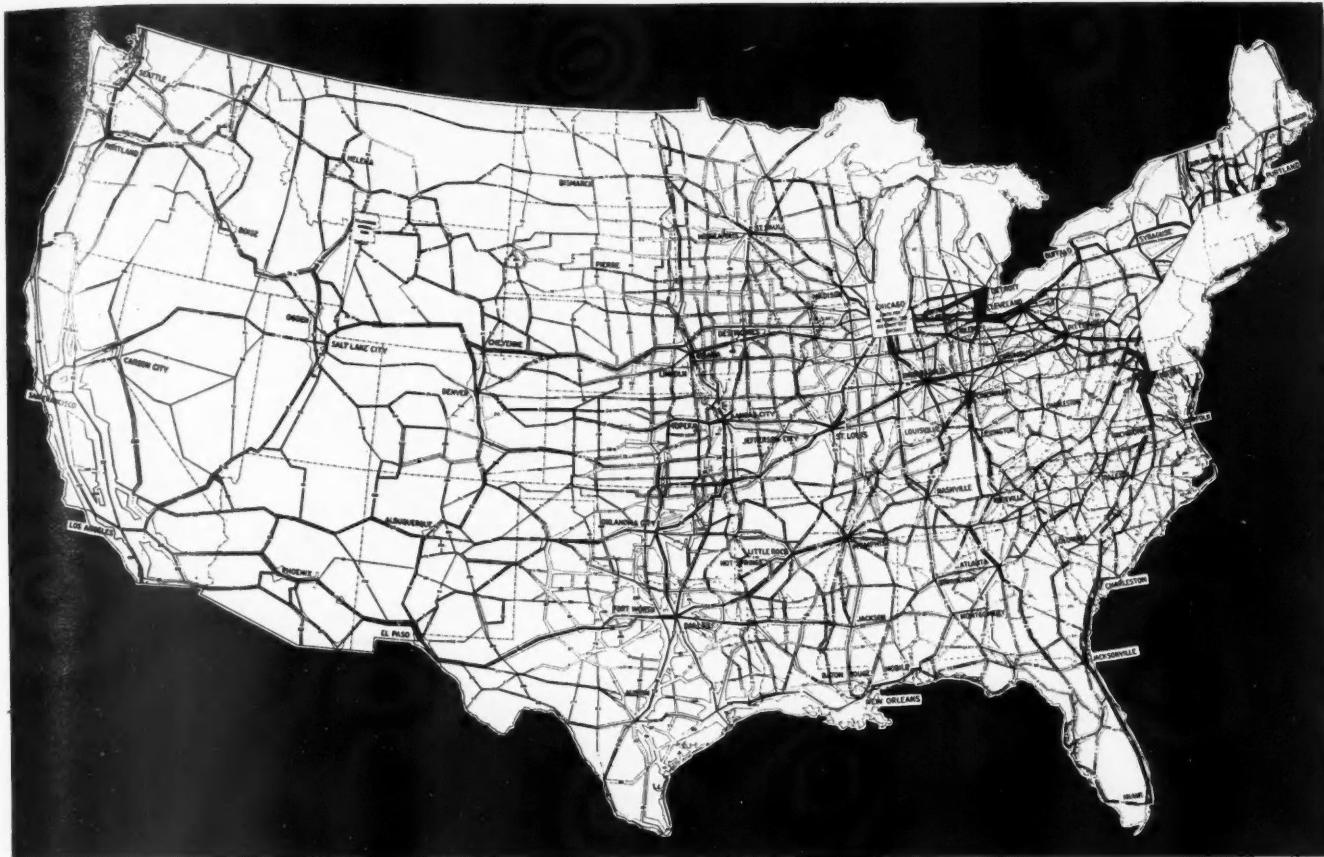
small motor units designed to travel over shell-torn areas as well as paved roads.

The War Department, as a result of its experience with motorized equipment in the last war, and through its engineering research since that time, is in a position to know exactly the type of equipment needed to strengthen the National Defense.

Current studies of the War Department are to determine how many trucks now in use commercially, could be turned over to the Government for use in moving food and supplies to certain key points throughout the country in an emergency.

But let's hear this story of highway transport indispensability to National Defense from an expert, speaking for the War Department.

Lieutenant Colonel Paul E. Tombaugh, Acting for General George V. Strong, appeared before the annual meeting of the American Asso-



adequate to support war equipment and make modern roads our first line of defense

ciation of State Highway Officials on October 11 and defined the road and bridge needs of the War Department. He said, in part:

"Roads have always exerted an important influence in military campaigns. Frequently the road net has been the controlling factor in tactical movements on the field of battle. Both strategical and tactical plans are limited by roads, since freedom of maneuver depends upon their number, quality, location and direction. . . .

"In the Wilderness Campaign of the War Between the States, Grant's supply system all but collapsed on account of the poor roads in that area. The great 'Valley Pike' of Virginia is inseparably linked with the fame of Stonewall Jackson. Probably the most outstanding example and one with which many of you are familiar occurred during the World War. The motor truck line which supplied Verdun was a creation born of necessity and not con-

templated by the German General Staff. The German plans inferred that the Verdun garrison could be isolated and defeated. The railroad line from the west was already under the fire of their guns and the important line from the south had been put out of commission by the St. Mihiel salient. Only one narrow gauge railway and one road remained open. Quick to grasp the situation, the French collected the motor transportation of the Second and Third Armies and pressed it into service on the road from Bar-le-duc to Verdun. In a short time, trucks were hauling 12,000 troops and 2000 tons of munitions daily along this route. Six thousand trucks passed a given point in 24 hours. One in every 14 seconds, rising at times to one every five seconds. To Frenchmen this road is now known as the 'Sacred Way.'

"The history of the American Army is closely associated with the road system of the United States.

In 1754, Colonel Washington and his little party of Virginians followed an Indian path across the Allegheny Mountains to the defense of Ft. Duquesne. Later, General Braddock marched his ill-fated British troops over a part of this route. Years later the Cumberland Road or National Pike was built by the War Department over this same military road for a considerable distance. This national highway soon became one of the great commercial roads of the nation. The lack of adequate highway facilities was a constant problem in the defense of the western frontiers. As early as 1819, resolutions were passed by Congress calling upon the Secretary of War, Mr. Calhoun, to report on the roads necessary for national defense:

"It is gratifying for me to express publicly, at this time," said he, "the appreciation of the War Department for the sympathetic interest shown by the Public Roads Admin-

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WHAT do truck operators think of the Motor Carrier Act, now that they have had four years of regulation by the Interstate Commerce Commission?

What do they think of the Commission?

If they had their way would they throw the Act down the sewer, bid adieu to the ICC and shift for themselves as they did before 1935?

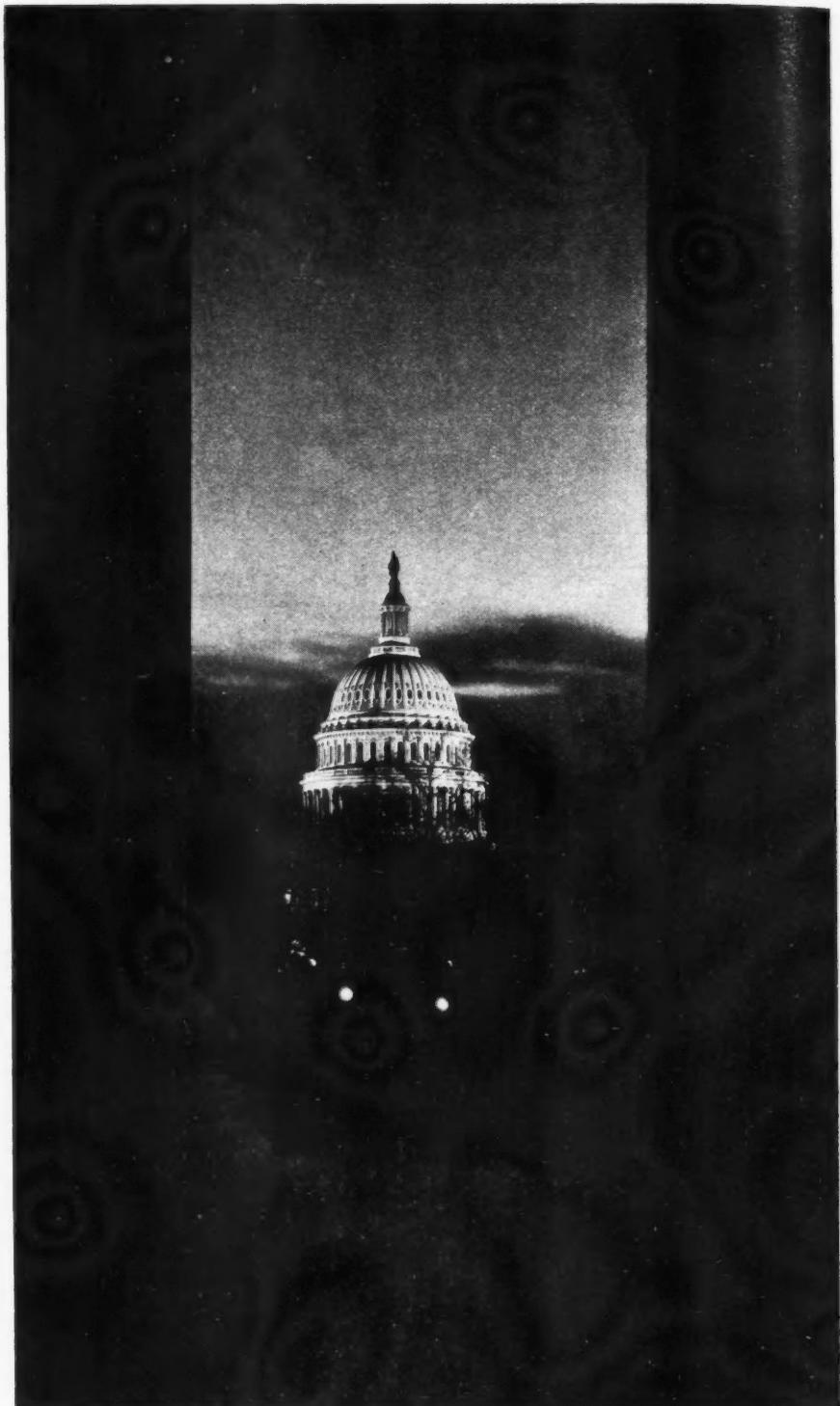
Answers to these questions can come only from those affected by the Act, rank-and-file truck operators throughout the country. We have conducted no Gallup Poll, nor are we posing as experts on the subject. But we have talked to many truckmen and learned something about what they are thinking.

Naturally, there are differences of opinion. The slant of the small carrier is not the same as that of the larger operator. Contract carriers do not always see eye to eye with common carriers. The interests of the local hauler do not jibe with the interests of the line-haul carrier.

But disregarding the conflicting views of individual carriers on comparatively minor points, there are certain major points upon which truckmen virtually are unanimous. And the average operator, if asked what he thinks of regulation, would reply, in effect, as follows:

For several years prior to regulation conditions in the trucking industry were not so good. "Chaotic" is the word. Neither carriers nor shippers knew what to expect from one day to the next. Rate-slashing was a daily practice. It was a chiseler's holiday—and then came the sheriff.

With the coming of regulation, many operators had visions of a stabilized industry, free of "on-the-



4 YEARS OF FEDERAL

ITS ACHIEVEMENTS, ITS FAILURES, ITS FAULTS AND THE

cuff" rates, fly-by-night operators and some of the burdens of non-uniform and discriminatory State laws.

Well, we ask, has that dream been fulfilled?

Partially, our informants say.

Unquestionably regulation has gone a long way toward stabilizing trucking rates. The ICC has investigated the rate situation in several large areas, and minimum rates have been set in New England, Middle Atlantic and Central territories. Investigations have been started in other regions and before long trucking rates should be thoroughly regimented.

Meanwhile, however, the chiseler still is with us. But he has to watch out lest the ICC catch up with him. If caught, he is hauled into court and assessed a stiff fine, most of which is waived on the culprit's promise to be good. Most chiselers realize a handsome profit on their chiseling despite the fines.

Leniency of the courts and lack of ICC personnel have retarded enforcement of the Act.

The L. & E. (law and enforcement) Section of the Bureau of Motor Carriers points with a bit of pride to its record, making allowances for an insufficient number of "G" men. Here is the record: From Oct. 15, 1935, the date the Act became effective, until Aug. 23, 1939, the section instituted proceedings against 434 carriers charged with violation of the Federal Motor Carrier Act; 362 convictions obtained, 66 are pending. Forty-three per cent of these cases were instituted in the last 10 months, an indication the wheels of the law are being speeded up.

Aside from enforcement, which is the measurement of the effectiveness of the law, most truckmen complain

about the Commission's unconscionable delay in deciding important cases. Today, after four years, many of them don't know whether they are subject to the Act or not, and they won't know until the Commission makes up its mind. Of course, the Commission has had a tough job on its hands in attempting to regulate tens of thousands of motor carriers, but that's not much consolation to the men who are being made the guinea pigs of bureaucratic experimentation. They want to know where they are headed.

Last March a committee of operators went to the Commission to see if things could be peped up a little. The truckmen approached the seat of the mighty in fear and trepidation. They were put at their ease, however, when the Commission chairman expressed surprise at the industry's patience with the dilatoriness of regulatory administration.

Since then, the Commission has reorganized its administrative setup with a view to speeding up the work of the Motor Division. In so doing, the Commission transferred some of the duties theretofore assigned to the Motor Division to divisions primarily concerned with rail matters. The result has been to lift the load from the Motor Division and shift it to the backs of the operators.

These rail-minded commissioners are handing down decisions, particularly on rates, which have the effect of discriminating against motor carriers in favor of their competitors. How long this will continue before independent motor carriers pass from the transportation field is a question many truckmen are asking.

Regulation, truckmen will admit, has served to "settle the field." Thou-

sands of little fellows have been crowded out. The red tape of regulation was too much for them, the expense too great. Perhaps they never should have been in the business. Perhaps they are better off driving a truck for an established carrier, or seeking America's great opportunity in some other field of endeavor.

The "grandfather" clause of the Act guaranteed that all carriers in operation prior to June 1, 1935, would be entitled to continue the business they were doing "without further proceedings." On the other hand, new operators are required to prove "public convenience and necessity," and break down opposition of other motor carriers and the ubiquitous railroads.

Thus, the trucking industry today fails to offer a business opening for an ambitious young man with the price of a down payment on a truck and a willingness to work hard. The field is pre-empted. In the words of the framers of the law, a limitation has been placed on facilities.

The established lines look upon such pre-emption as a good thing. Many "grandfather" carriers, however, squawk that the Commission has been too strict in interpreting their rights. They say the Commission is guilty of "strained and tortured construction" when it limits a carrier's operation to the hauling of peanuts when he has held himself out to transport nuts of all kind. Rights should be granted, the carriers say, on the basis of *classes* instead of *specific* commodities. The truckman who served a general store should be permitted to haul all things handled by his customer, and not merely eggs, sealing wax and brooms.

(TURN TO PAGE 74, PLEASE)

REGULATION

FEARS IT AROUSES AMONG REGULATED CARRIERS

chevrolet

GOES TO

Hypoids

FOR ENTIRE LINE

CHEVROLET'S line of commercial cars and trucks for 1940 incorporates changes in eye-appeal, many improvements in body design and chassis features. One of the principal mechanical changes is the adoption of hypoid rear axles in combination with additional tilting of the engine to about $3\frac{3}{4}$ deg. Another marked advance is the use of a new all-helical gear three-speed synchromesh transmission on the light delivery and $\frac{3}{4}$ -ton chassis.

All truck models are fitted with the new "sealed-beam" headlamps with separate parking lamps. Complementing this is the adoption of the new shunt-wound generator, rated 33 amp., hot, with full voltage-current regulation. Battery capacity has been stepped up to 100 amp. hr., the same as on passenger cars and the same battery may be used as a replacement on previous truck models.

The commercial line includes the

sedan delivery model on the Master 85 and Master DeLuxe chassis, and station wagons on the Special DeLuxe and Master chassis, both on 113-in. wheelbase. The sedan delivery follows the styling of the Sport Sedan with styling features the same from the front end to the rear of the side doors. From the side doors, rearward, it is longer than last year's model with longer advertising panels. Interior loading platform is 6 in. longer, the platform is nearly 2 in. wider for the full length since the wheelhouse does not extend as far into the interior.

The sedan delivery chassis is identical with that of the Master 85 sport sedan except for the mounting of an 18-gal. fuel tank under the front of the loading platform; also the use of heavier commercial rear springs.

Newcomer in the truck line is the 158½-in. w.b. platform truck available with a range of platform and

Top right: Chevrolet's new sedan delivery uses the "Master 85" chassis

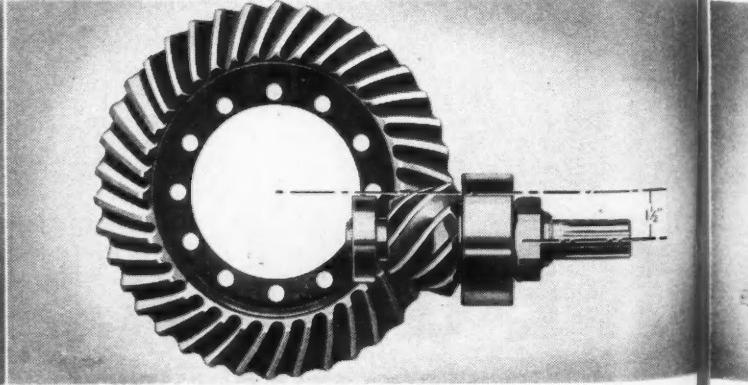
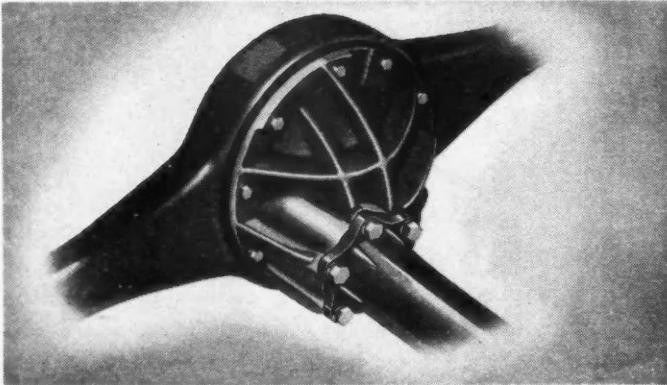
Right: Stake truck, on 158½ in. w.b. shows styling of new 1½ ton series

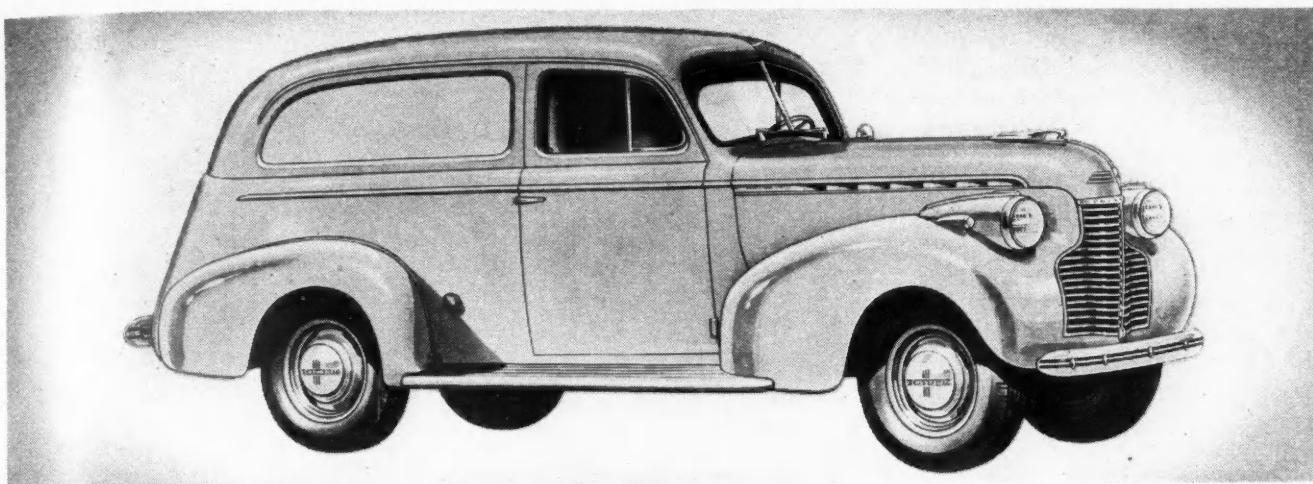
Bottom right: The C.O.E. tractor shown with van trailer has a 107½ in. wheelbase. The graph shows generator output compared with '39 types

Below: The new hypoid rear-end allows for a 1½ in. drop in the drive shaft

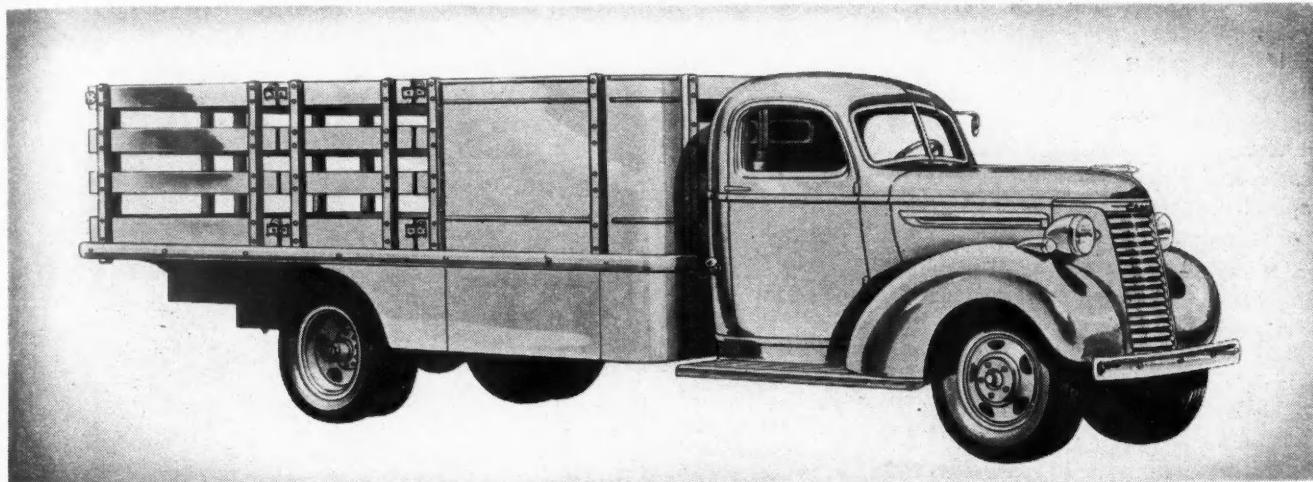
stake bodies. Apart from the new stake bodies and various changes in decorative features, the styling of the truck line remains substantially the same.

Stake bodies on all 1940 Chevrolet trucks are improved in appearance and durability. The front corners of the platform are rounded and are diagonally braced. A new rub-rail of





MANY IMPROVEMENTS MADE IN CHASSIS AND ENGINE DETAILS



convex section protects the platform edges. Stake pockets are pressed into this new rub-rail instead of being welded on. They are so located at the cross-sills that there is better support for the stake racks. At the rear stake pocket, a brace is added for greater stability when the rear stakes are used or when the end gate is used.

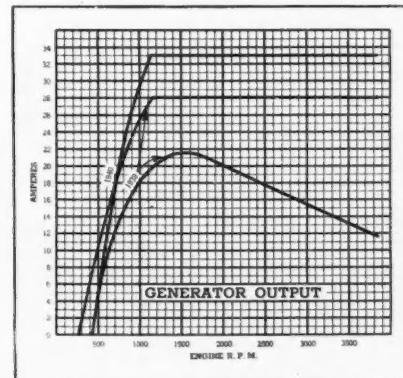
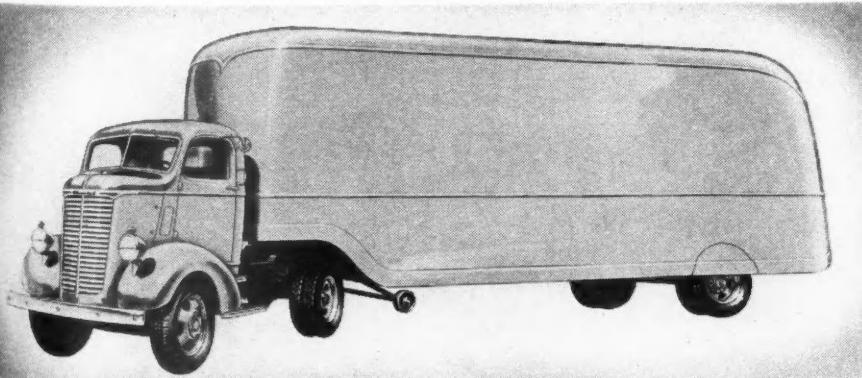
A steel floor is available as a regu-

lar production option. Its surface is a non-skid pattern and it is supported by a wooden sub floor which eliminates rumble. A sheet steel sign panel, which matches the appearance of the corner panels, is available. There is available a set of sheet metal skirts on the 158½-in. heavy duty truck. The light delivery pickup body is entirely redesigned with a conse-

quent increase in size and strength. More than 2 cu. ft. is gained in capacity.

Coming to the mechanical features, an optional front suspension consisting of lower rate front springs and double-acting shocks is again offered on 1-ton trucks wherever load requirements permit taking advantage

(TURN TO PAGE 72, PLEASE)



THE new re-styled Dodge truck line for 1940 is featured by a completely new series of 1½-ton trucks having increased horsepower and torque. The front end, notably in the radiator shell and grille, has been changed to add eye appeal and the cabs have a sloping one-piece V-shaped windshield that opens.

All models with the exception of the 3-ton truck have the new sealed beam headlamp with its superior lighting ability and longer life. To supply the current for the 50-candle-power lights the new models are equipped with 35-amp. generators. The generators are shunt wound and are equipped with voltage and current control.

Cab doors are equipped with semi-rotary type door locks which eliminates the necessity of slamming doors and rear body doors are equipped with checks that hold them at either 90 or 180 deg. Seats are wider and deeper and have softer tops. Panel body seats are bracketed more rigidly.

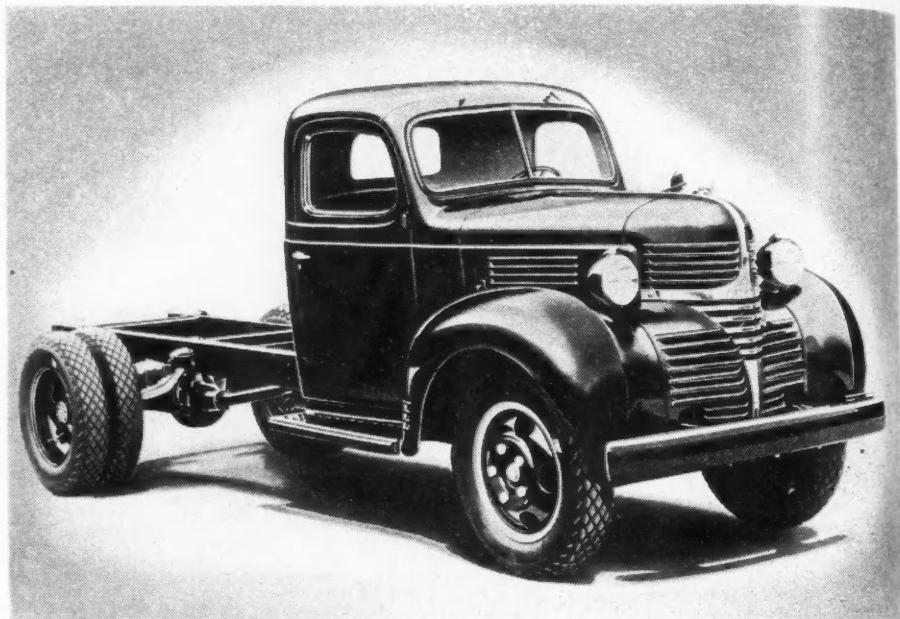
Two-speed rear axles are available in the 1½, 2 and 3-ton models. Where two-speed axles are not used, all models up to and including the 2-ton will be equipped with hypoid axles.

Detailed improvements are as follows:

Panel, pickup, canopy and screen are body types in the ½-ton 116-in. w.b. series. Gross rating is 4200 lb. Express body (17 in. high, 78 in. long and 48¼ in. wide) was designed to allow easy packing of standard commodities. Express bodies and canopies have oak floor. Seats in the panel body have been redesigned, providing rigidity and additional strength under the seat-back brackets. New feature is the new wheel attaching bolt which is made in right and left hand threads to prevent loosening. Engines are mounted on rubber at front and rear. Optional rear axle ratios are 3.73, 4.1, 4.3, and 4.78.

The ¾-ton series with a wheelbase length of 120 in. has express, stake and platform body types. Gross rating is 5000 lb. with CA dimension of 44 11/16 in. Express body measurements are 48¼ in. wide and 90 in. long. Have new oak floors and new wheel attaching bolts. Engines are mounted on rubber.

Panel, express, platform, stake, canopy and screen compose the body types in the 1-ton series which has a

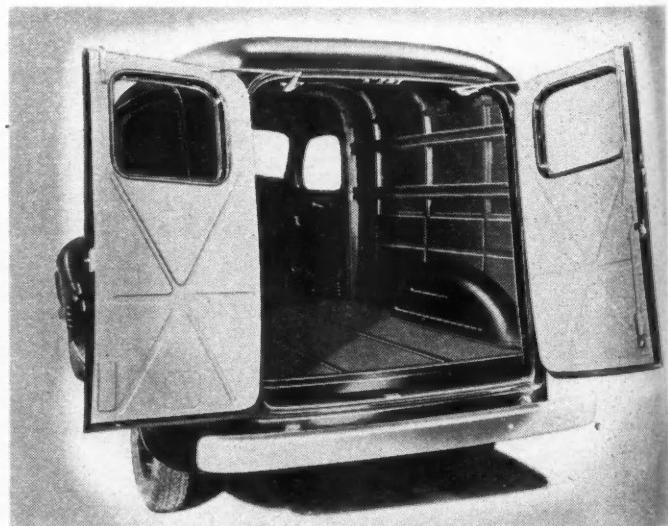


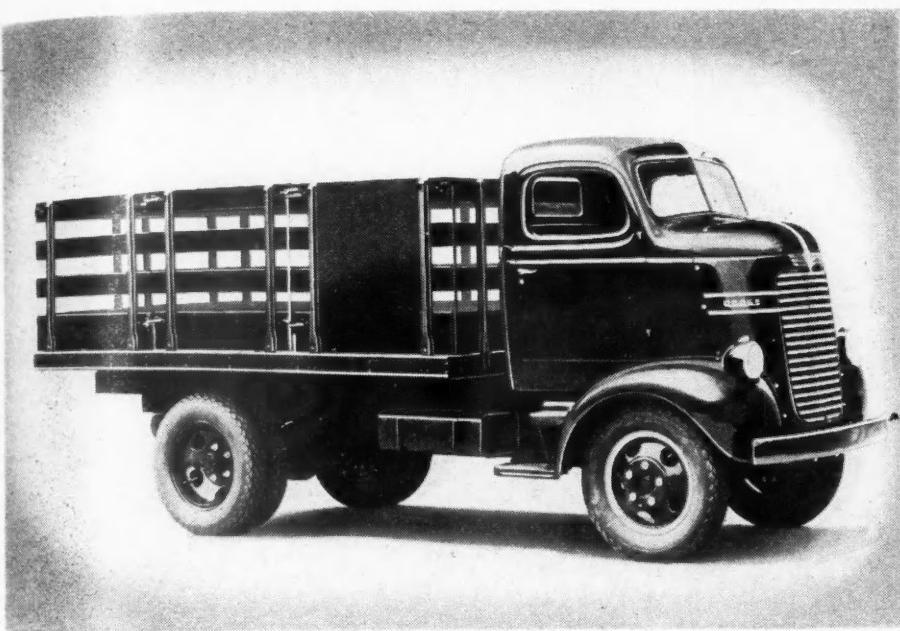
The redesigned 1½-ton chassis has had its gross rating increased to 13,500 lb.

Dodge

Other models, ranging from ½ to 3 tons, also redesigned

A new feature on all panel models is the safety check which holds doors at 90 or 180 deg. for easy loading



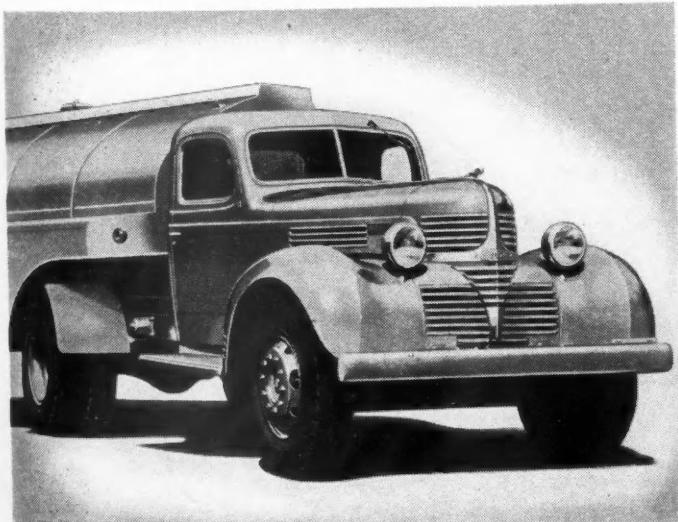


. . . while new 1 1/2-ton c.o.e., now designed and built by Dodge, has same rating

KEYNOTES ITS 1940 LINE WITH NEW 1 1/2-TON TRUCKS

New line includes a 1 1/2-ton C.O.E. and a 3-ton diesel

Dodge diesel engine is optional on all 3-ton models.
Booster valve and 10-stud wheels are standard equipment



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maximum gross rating of 6400 lb. and two wheelbase lengths of 120 and 133 in. CA dimensions are 44 11/16 in. and 57 11/16 in. Engines are mounted on rubber. This line has a new hypoid rear axle with ratios of 4.3, 4.89, and 3.9.

A complete new line of 1 1/2-ton trucks—a conventional model and a Dodge-manufactured cab-over-engine—is introduced by Dodge this year.

Conventional—Gross rating is 13,500 lb., an increase of 1500 lb. over last year. Body types are platform, stake and express. Four wheelbase lengths are offered: 126 1/2, 133, 160, and 190 in. The front axle "I" beam has been increased in size from 2 1/4 x 1 3/4 to 2 5/16 x 1 29/32 and the king pin from 7/8 to 15/16 in. in diameter. Smoother clutching is claimed through redesigning of the clutch. The front spring bolt is increased in diameter from 5/8 to 11/16 in. To facilitate the installation of booster brake equipment, the battery is re-located on the right side and a booster cylinder bracket is incorporated in the frame. Heat is reduced around the battery through reshaping of the exhaust pipe to allow more battery clearance. A rotary type oil pump replaces the present gear type. A new 12 1/2 in. hypoid axle is used with ratios of 5.625 as standard and 5.111 and 6.285 optional.

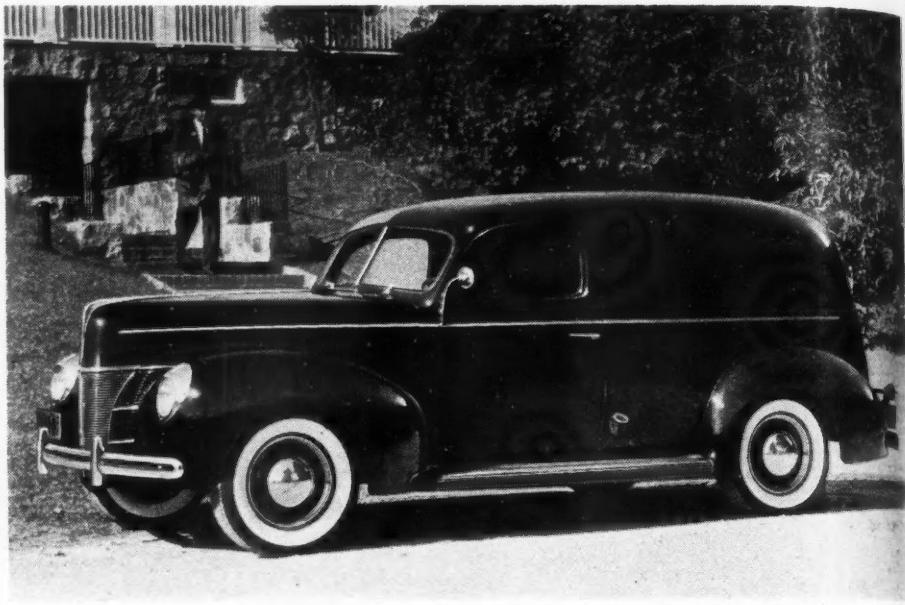
Cab-Over-Engine—This new Dodge-built model has a gross rating of 13,500 lb. It will be offered in two wheelbase lengths, 105 and 129 in. with CA dimensions of 60 and 84 in. respectively. Full width seat and gear shift lever in "normal" or standard position make for driver comfort. Front springs are 42 in. long and 2 in. wide. The radiator is filled from the outside and the engine oil filler is accessible through a door in the cab floor. The front end is extremely distinctive in design. Roomy, well ventilated, the cab provides a wide range of driver vision. Optional rear axle ratios are 5.111, 5.625, and 6.285. The engine horsepower is 92 at 3000 r.p.m. and maximum torque 176 lb. ft. at 1200 r.p.m.

Two-ton models have a gross rating of 15,000 lb. and are provided in five wheelbase lengths: 136 in. (cab to axle 60 11/16 in.), 148 in. (cab to axle 72 11/16 in.), 160 in. (cab to axle 84 11/16 in.), 178 in. (cab to axle 102 11/16 in.), and 220 in. (cab to axle 144 11/16 in.). Flat face

(TURN TO PAGE 71, PLEASE)



The 112-in. Panel (above) and Sedan Delivery (right) follow standard and deluxe passenger car styling. Gas tanks are under new tongue and groove flooring. Lowered hood sides (below) and fan mounted on crankshaft make engine parts more accessible



FORDS FOR '40

Come in 42 body and chassis types, all with entirely new front-end styling. Longitudinal front springs and Hotchkiss drive on larger models aid accessibility

FORTY-TWO body and chassis types with six wheelbases and three V-8 engines make the 1940 line of Ford trucks the broadest in Ford history. All models have new styling and an impressive list of improvements.

The new truck chassis has longitudinal front springs which make the engine more accessible from the bottom. Accessibility to engine accessories has also been made greater by lowering the sides of the hood. The fan is now mounted on the crankshaft in all conventional trucks, making the distributor more accessible, while a lower radiator and a single belt add to the ease of servicing this unit.

Drive is now taken through the springs, eliminating the torque tube, which makes servicing the clutch, transmission, universal joints and rear axle easier. Needle-bearing universal joints are used on all trucks.

1940 FORD PRICES

Distribution and delivery charges; Federal, State and local taxes extra

12-Inch COMMERCIAL *

12-Inch COMMERCIAL *	122-Inch TONNERS *	122-Inch CONVENTIONAL	158-Inch CONVENTIONAL
Sedan Delivery.....	\$705	Chassis with Cowl.....	\$575
Pickup with Cab.....	595	Chassis with Windshield.....	595
Stake with Cab.....	645	Chassis with Cab.....	665
Platform with Cab.....	625	Express with Cab.....	730
Panel Delivery with Slats.....	690	Stake with Cab.....	745
Chassis with Cowl.....	480	Platform with Cab.....	720
Chassis with Windshield.....	500	Panel.....	835
Chassis with Cab.....	570		

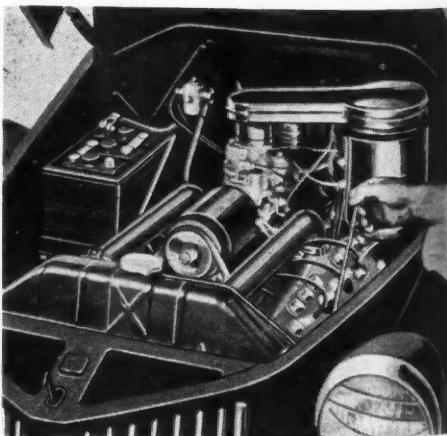
122-Inch $\frac{3}{4}$ -TON *

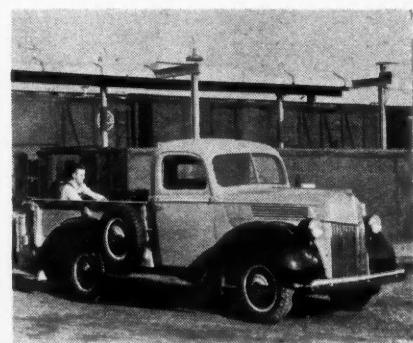
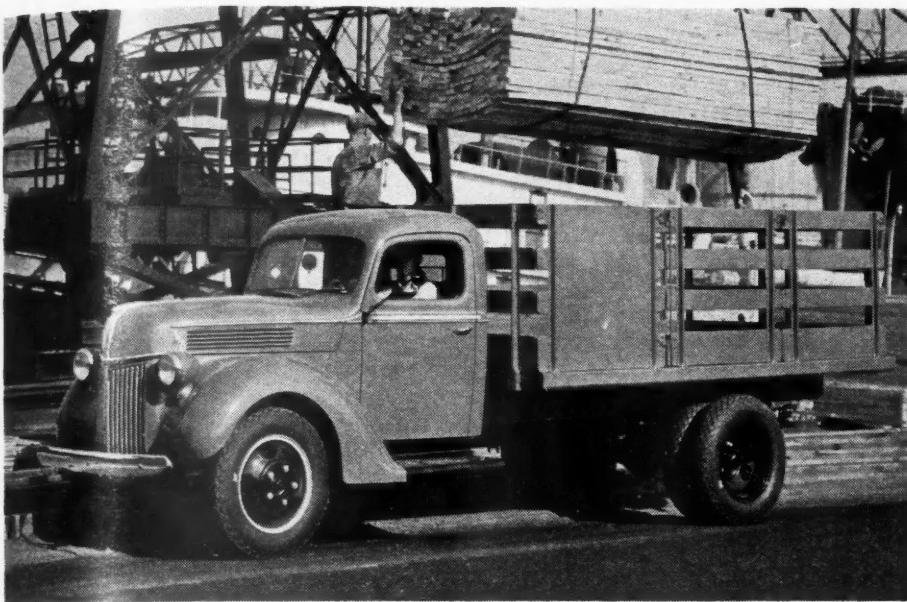
122-Inch $\frac{3}{4}$ -TON *	122-Inch CONVENTIONAL	158-Inch CONVENTIONAL	
Chassis with Cowl.....	540	Chassis with Cowl.....	\$590
Chassis with Windshield.....	560	Chassis with Windshield.....	610
Chassis with Cab.....	630	Chassis with Cab.....	680
Express with Cab.....	695	Stake with Cab.....	770
Stake with Cab.....	710	Platform with Cab.....	740
Platform with Cab.....	685	Panel.....	870
Panel.....	800	Dump with Cab.....	940

* Also available with 60 hp. engine, \$15 less.

CAB-OVER-ENGINE

101-Inch Chassis with Cab.....	\$885
101-Inch Stake with Cab.....	955
101-Inch Platform with Cab.....	925
134-Inch Chassis with Cab.....	890
134-Inch Stake with Cab.....	1010
134-Inch Platform with Cab.....	960
158-Inch Chassis with Cab.....	915





Largest of standard Ford chassis is the new 158 in. wheelbase unit shown (left) with stake body, and also available in c.o.e. type. The $\frac{3}{4}$ to 1-ton model (above) has same styling. Hotchkiss drive and new longitudinal springs appear in chassis views below

Longer rear springs reduce the unsupported length of the frame and front springs are carried on a heavier front axle. There is a net reduction in chassis weight.

New sealed beam headlamps are used with a tell-tale lamp on the instrument board which lights when the upper beam is being used. The beam switch is operated by a foot button at the left of the clutch pedal. A 120-amp. hour battery is now standard to meet the additional requirements of the new headlamps. A generator with greater output is automatically adjusted by a voltage regulator.

Seat cushions are new in design. They have mattress type springs with deep coils held in position by interlacing spring wires tied crosswise as well as lengthwise. This means that each individual coil can be depressed independently without pulling the others out of place, thereby causing

the cushion to conform more closely to the contour of the body.

In the new instrument arrangement is a Shiftoguide speedometer. This is marked so that drivers can tell at which speed to shift gears for greatest pulling power and economy. A new instrument in the group is a battery condition indicator.

Panel bodies have tongue and groove flooring as additional protection to the loads that they carry. New wheels are available on all regular and cab-over-engine trucks accommodating tires up to 8.25/20.

Commercial cars are given the same front-end styling as the passenger cars with the exception of the sedan delivery, which has the front end styling of the deluxe car.

The sedan delivery is equipped with the remote control shifting lever on the steering column. The spare wheel and tire are housed under the

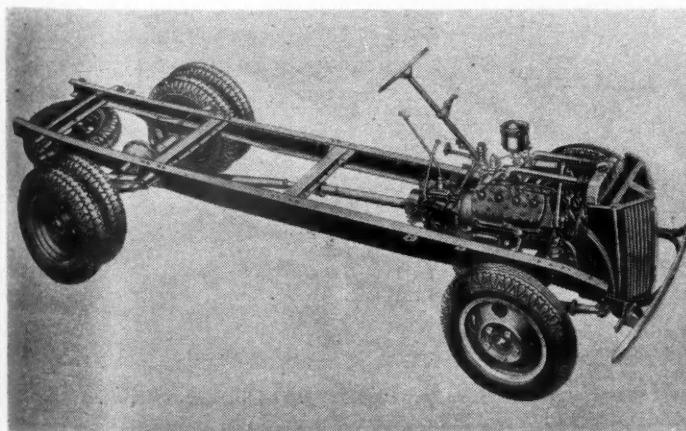
floor. The entire interior is lined with insulating material for greater protection of loads.

The floor of the 112-in. stake truck has been lowered 3 in. and its load space increased.

Commercial cars with 85-hp. engines have synchronized shifts. Hydraulic brakes are used on all models.

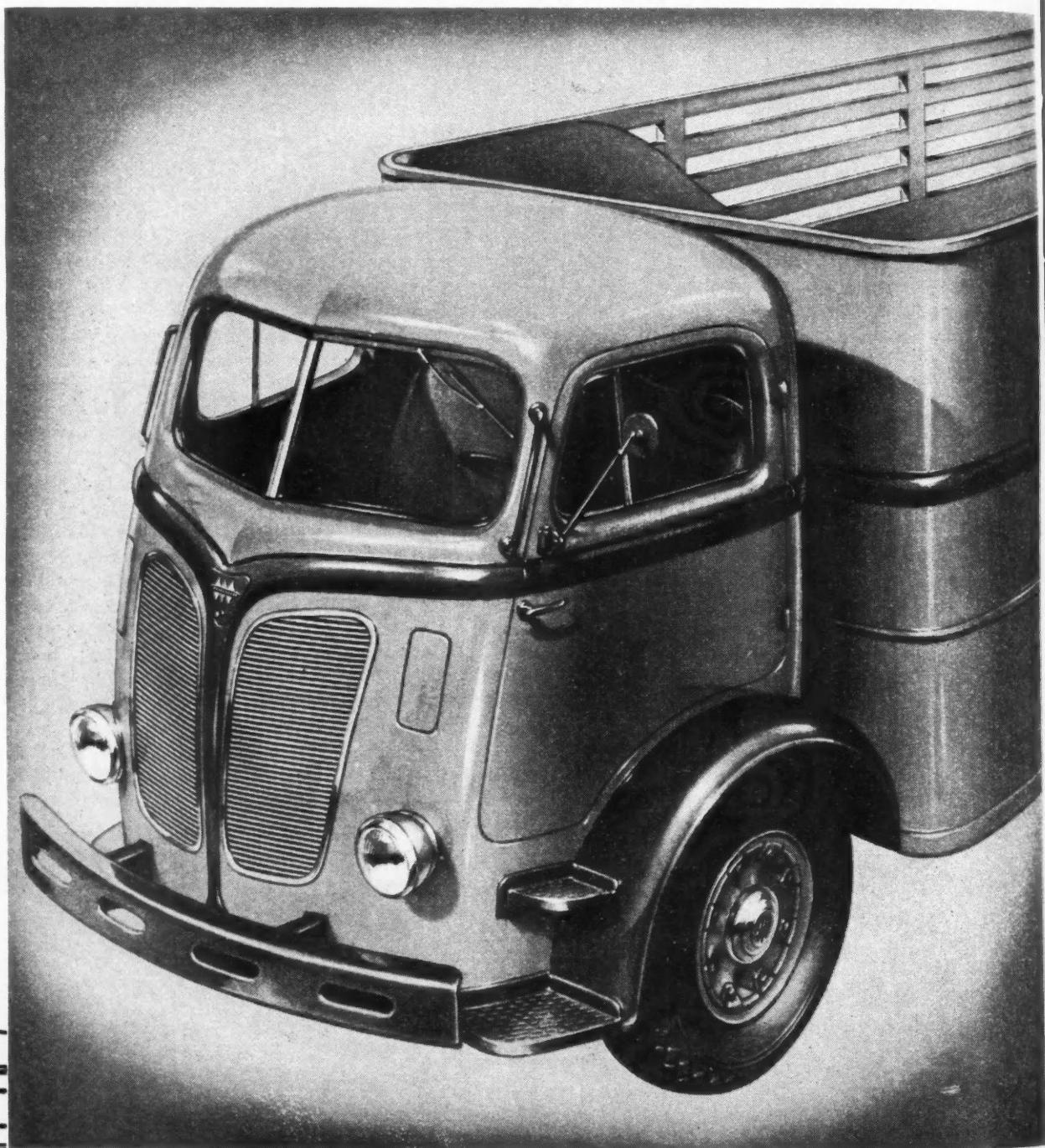
A new 158-in. w.b. chassis is available in both conventional and cab-over-engine types. It provides an 84-in. CA dimension in the conventional type and 117-in. CA dimension in the cab-over-engine model.

New styling imparts fresh new appearance to both the regular trucks and commercial cars. The hood of the regular truck is massive in appearance, its total effect emphasized by perpendicular chrome grille bars and long horizontal louvers. Three engines are available, the 60 hp., the 85 hp., and the 95 hp.



IHC's heavy COE's

Four models with gross weights of 18,000 and 24,000 lb. offer engines

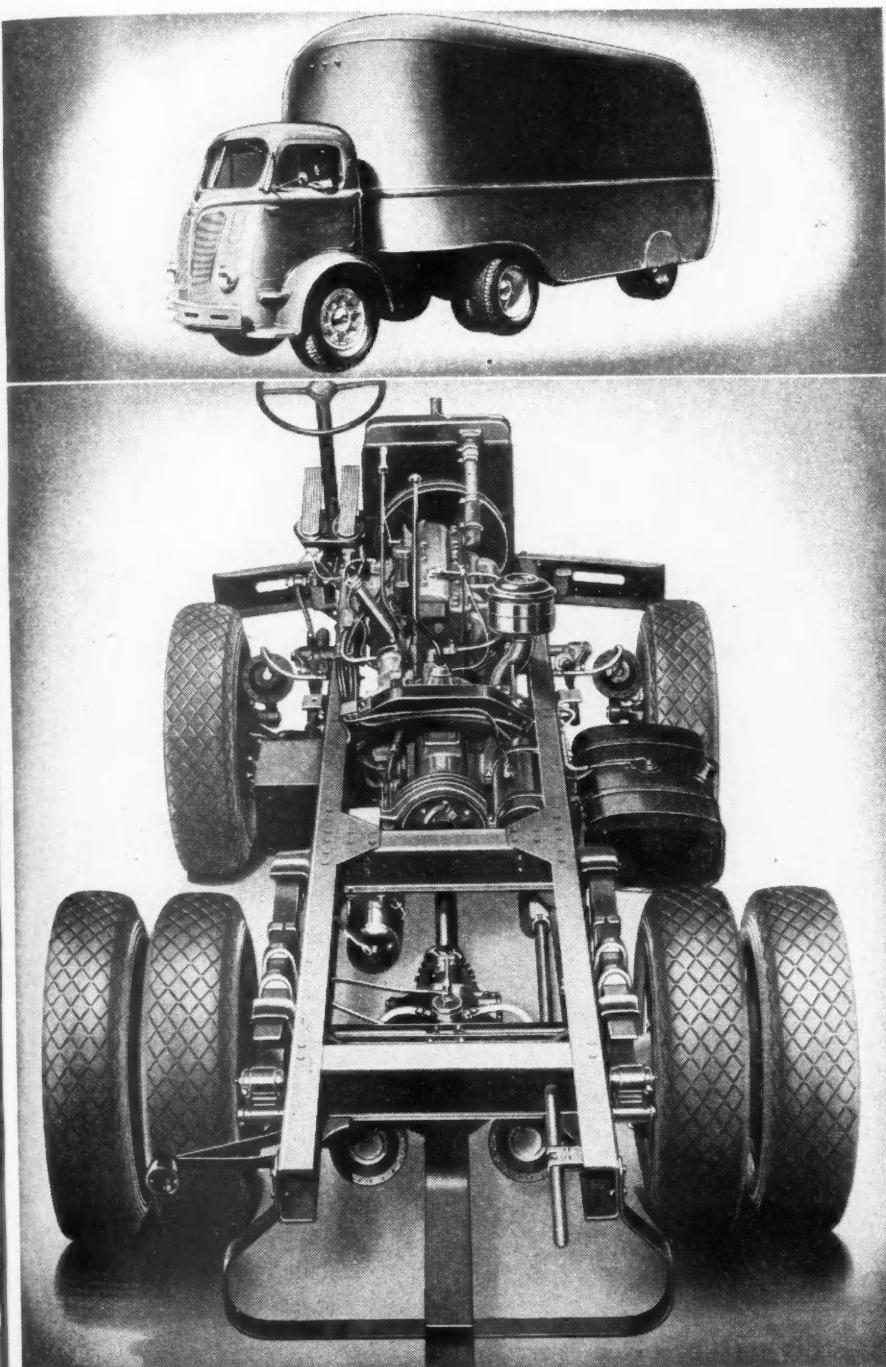


Modern styling is apparent in the front-end view of new series. Note ventilation panes in cab windows.

THE International Harvester Co. has entered the medium and heavy duty cab-over-engine field with four new models. Models D-500, DR-500 and DS-500 all have a gross

vehicle weight of 18,000 lb. and have respectively spiral bevel, two-speed and double-reduction rear axles. They are available in wheelbases of 94 in., 106 in., and 124 in. The model

from 298 to 451 cu. in. and various axle types



Tractor with van trailer and tractor chassis show new compact design

DR-700 with a double reduction rear axle is rated at 24,000 lb. gross and also comes in a 142-in. wheelbase.

The engines are all valve-in-head six-cylinder engines. Standard in the 500 series is an engine having 298 cu. in. of piston displacement which develops 94 hp. at 2800 r.p.m. and a torque of 218 lb.-ft. at 1600 r.p.m. Bore and stroke are $3\frac{3}{4}$ in. by $4\frac{1}{2}$ in. A 361 cu. in. engine is available for this series which develops 111 hp. at 2700 r.p.m. and 269 lb.-ft. of torque at 1500 r.p.m.

In the model DR-700 a 401 cu. in. engine is standard and it develops 114 hp. at 2600 r.p.m. and 308 lb.-ft. of torque at 800 r.p.m. A 451 cu. in. engine is available for this chassis. Replaceable wet cylinder liners are used in each of these models.

Five speed transmissions are standard throughout the line and all have oil bath air cleaners. The full pressure lubrication system is equipped with an oil filter. The DR-700 is equipped with air brakes and an air operated clutch. Clutch and brake pedals on this model are of the treadle type.

Comfort and safety are provided by the insulated all steel cab. The two piece V-type windshield is stationary. Ventilation is provided by two-piece independently operated windows in the doors and hinged compartment ventilators. There is ample leg room for the driver and controls are conveniently located.

Access to the powerplant is by removing the tunnel cover, floor boards and seat covers. The engine with clutch, transmission and propeller shaft brake can be removed through the front of the cab. This entire unit rests on rollers in the frame and can be removed after the various attaching parts have been removed. It is not necessary to remove seat cushions to add oil to the crankcase as there is a riser on the right side.



MACK TRUCKS, INC., has placed on the market a retail delivery unit to be known as the Mack "Retailer" and designed expressly for service by bakeries, dairies, laundries, dry cleaners, groceries, department stores, florists, newspapers, and other similar merchants who make door-to-door deliveries.

The "Retailer" employs a special Mack chassis of 120½-in. wheelbase, produced at the Mack factory in Allentown, Pa. In reality a small cab-over-engine truck, the "Retailer" incorporates principles of design and construction tried and proven on Mack chassis over a period of years, and it is the simplicity of this cab-over-engine design which eliminates the use of intricate and multiple parts requiring costly mechanical service.

Safety, accessibility, and economy of operation have all been combined in the new Mack "Retailer." A large windshield and large quarter side windows afford the driver excellent vision, plus the fact that the driver's seat has been moved forward 4 ft. further than is usual. Sealed Beam headlights, provided as standard equipment, make for safer night driving. Ventilation of the driver's compartment is provided by two adjustable ventilators and by constructing the door at the driver's side so that the window is adjustable.

The removal of all hindrances is also an outstanding feature in the Mack "Retailer." Important in this respect are the gear shift control mounted on the steering column and mounting of the emergency brake on the dash. The driver's seat, provided as standard equipment, is adjustable both fore and aft and tilts forward against the steering wheel when the driver wishes through passage. For easy servicing the battery box is located in the left front entrance step weld and has a removable door. A removable door in the floorboards of the driver's compartment also gives easy access to the oil gage stick and filler.

For economy of operation the new Mack "Retailer" features an economy package engine of 3 3/16 in. by 4 5/8 in. bore and stroke developing 67 hp. at 2800 r.p.m. and having a piston displacement of 210 cu. in. Outstanding features of this economy package engine are its updraft carburetor, updraft intake manifold with special

ports, vacuum control distributor, and 6.8 to 1 high compression cylinder head.

Drive is from a dry, single-plate clutch, 10 in. in diameter, and the three-speed transmission has a constant mesh gear face of 13/16 in. The rear axle is full-floating with a 1 5/8-in. axle shaft, the front axle being of the reversed Elliot type.

Chassis frame is of pressed carbon steel with side members 7 in. deep, 3/16 in. thick with a 2 1/8-in. flange. There are five cross-members, three being of the box girder type and two of the channel type. Springs are of the progressive type and have been

designed specifically for this type of service. Lockheed hydraulic brakes provide for a braking area of 236 sq. in.

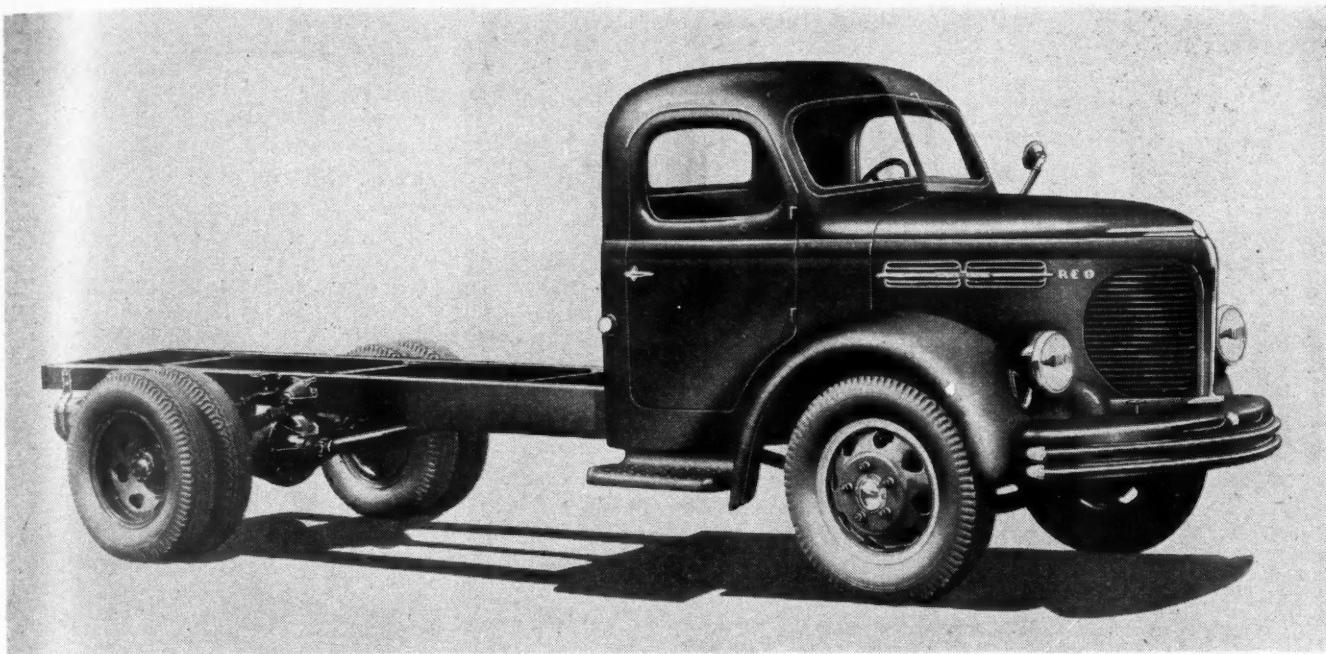
The standard body of the Mack "Retailer," manufactured at the Mack plant in Long Island City, N. Y., incorporates the desirable features for fast and efficient retail door-to-door deliveries. This body, 9 ft. 6 in. long at the belt line, 9 ft. 9 in. long at the floor line behind the driver, 70 in. wide inside, and 65 in. high inside, has framing and uprights of oak and ash with 1/4-in. fir plywood and 22-gage stretcher leveled sheet steel

(TURN TO PAGE 71, PLEASE)

MACK RETAILER

Newcomer in package delivery field features a 6-cylinder 210 cu. in. engine, 120½ in. wheelbase, Lockheed brakes, steering column shift and 9-ft. 6-in. forward-drive body



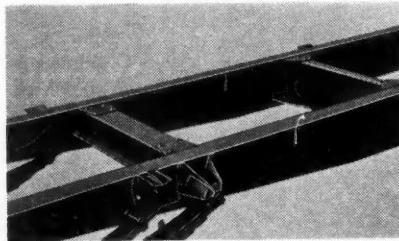


REO READIES FOR 1940

Court approval of reorganization plan expected to put new Reo line in strong position

WITH final court approval of a reorganization plan for Reo Motor Car Co. placed in the hands of stockholders, Reo with its new line of motor trucks, is looking forward to 1940 with confidence. The approval was submitted by Judge A. F. Lederle in U. S. District Court, Detroit, on Oct. 3, and gives full sanction to the proposal submitted by Theodore I. Fry, trustee, after hearings which extended over a period of several months.

Stockholders were given 30 days to approve the plan, which provides for three voting trustees to control the operation of the company for a period not to exceed 10 years and includes a loan of \$2,000,000 from the Reconstruction Finance Corp. The voting trustees were insisted upon by the RFC as a condition for making the



Reo frames are unusually strong and support entire length of body. This one, from a 1½-ton model, is 7½ in. deep with 3-in. flange top and bottom

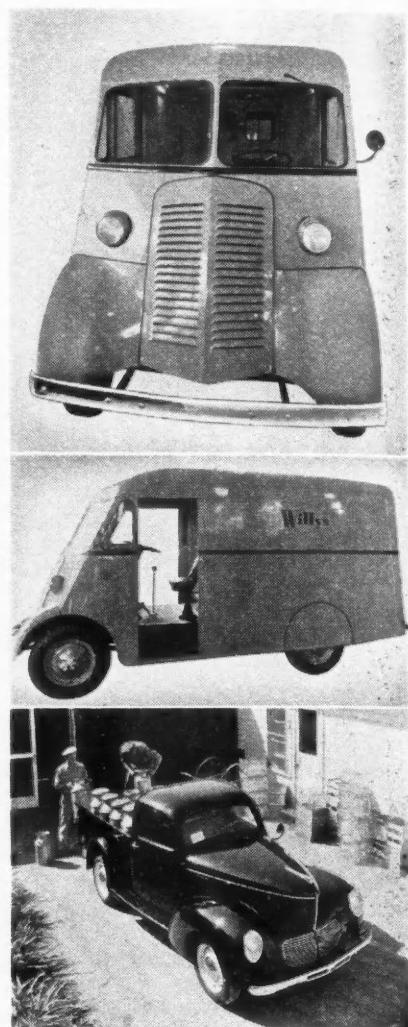
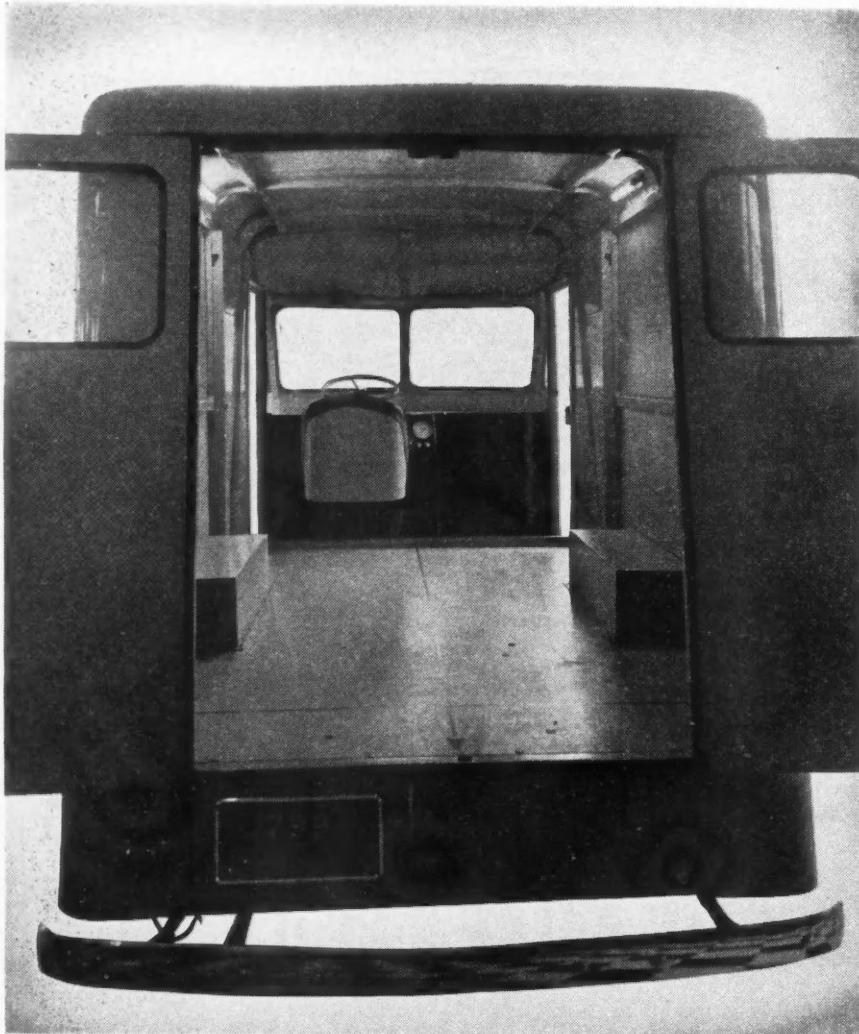
loan in order to insure a continuance of manufacturing policy during the life of the loan. The loan would be paid off in six years at the rate of \$24,000 per month. Trustees named by the court are John W. Miner, Jackson, Mich., attorney and banker; Otto S. Seyferth, Muskegon manufacturer, and George B. Judson, Detroit banker.

Provisions of the plan call for payment of all creditors with claims of less than \$1,000 in cash out of the RFC loan, payment of claims exceeding \$1,000 out of the segregation, and gradual liquidation of assets valued at \$1,250,000. These claims total \$415,000 and the assets involved consist largely of real estate in Lansing, Chicago and Detroit plus machinery not essential for production purposes.

The Reo line includes five new models with capacities ranging from 1½ to 6 tons. Relocation of the front axle, several inches rearward from average positions, provides more loading space per inch of wheelbase.

Three standard wheelbases will be supplied in all models as follows:

120 in. for 9-ft. body.
(TURN TO PAGE 76, PLEASE)



Willys *semi* COE

New 1½-ton, all-steel panel delivery makes low-cost bid for light, bulky loads. Utility pick-up also offered

WILLYS-OVERLAND MOTORS, INC., announces for 1940 a semi-cab-over-engine, half-ton panel delivery truck designed to offer a high pay-load capacity per pound of truck weight and priced at \$799 f.o.b. Toledo before taxes. There is also a

new 1½-ton all-purpose pick-up priced at \$525 f.o.b. Toledo before taxes.

The all-steel one-piece body of the panel delivery is said to afford insulation against heat, cold and rumble. The truck is especially designed for florists, bakers, confectioners, dec-

Front, side and rear views of package-type delivery. Clean interior is at once apparent. The all-purpose pick-up follows passenger car styling

orators and others demanding large carrying capacity at a minimum of expense. The load compartment is 96 in. long, 63 in. wide and 63 in. high.

The body frame is of tubular, unit-weld construction with Plymet panels and double-faced doors and Phenaloid one-piece hardwood floor, forming a smooth, dustproof interior. The fabric-covered plywood roof inserts repel heat. The two rear doors are sealed with sponge rubber and hung with full-length piano-type hinges. The compartment for spare tire and tools is easily accessible, located under the body at the rear. Square wheel housings in the load compartment afford a maximum of usable space.

In the cab there is a single, adjustable driver's seat and full vision
(TURN TO PAGE 71, PLEASE)

THE Federal Motor Truck Co. enters 1940 with the broadest coverage of the truck market it has ever offered. New in the line are three forward-control chassis designed for package delivery type bodies. In addition there is a complete range of conventional models from $\frac{3}{4}$ to 8 ton, a group of cab-over-engine trucks from $1\frac{1}{2}$ to $5\frac{1}{2}$ ton, and a series of 6-wheelers with ratings from 2 to 8 ton. Altogether there are 37 models with prices from \$595 up, for standard chassis f.o.b. factory.

The increasing trend toward forward-control package delivery trucks which heretofore have been built mostly in light capacities only, has led to a demand for this type of vehicle in larger sizes. To meet this demand Federal introduces three forward-control chassis in the $1\frac{1}{2}$ - $2\frac{1}{2}$ -ton range. These new units are designed to fit the requirements of laundries, bakers, department stores, furniture concerns, and numerous other operators who want the advantages of the forward-control package delivery truck but who need more load space and a heavier chassis.

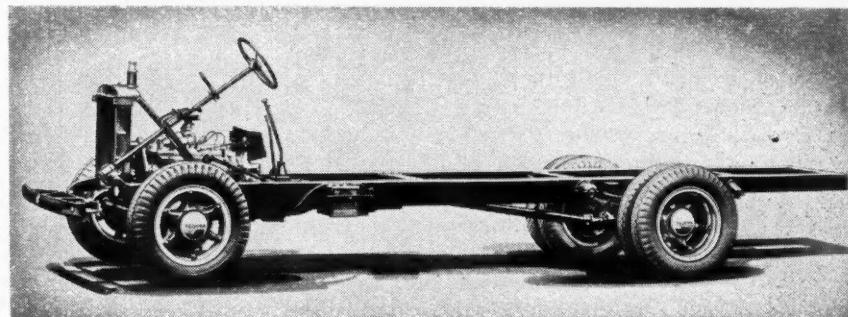
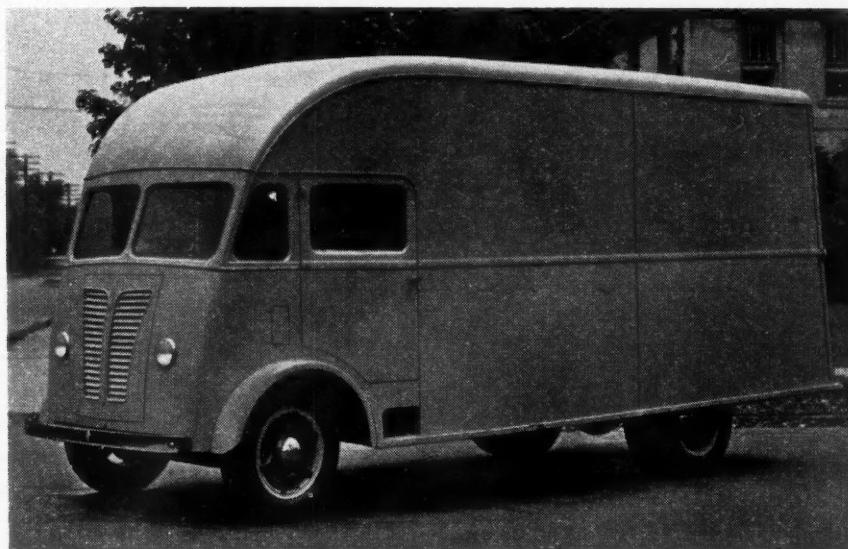
These new forward-control chassis carry the same model symbols (11, 12 and 14) and are of the same general specifications as the corresponding conventional Federal trucks of like capacity but have the advantages of shorter turning radius and greater loading space back of driver's seat. Model 11 is rated at $1\frac{1}{2}$ -2 tons, model 12 at $1\frac{1}{2}$ -2 tons, and model 14 at $1\frac{1}{2}$ - $2\frac{1}{2}$ tons. Each is built in four wheelbase lengths 127 in., 143 in., 152 in., 164 in. with inside loading spaces of 11-12 ft., 13-14 ft., 15 ft. and 16-17 ft. Turning radii are, respectively, 21, 24, 26 and 28 ft.

The $\frac{3}{4}$ -ton Federals are offered in four and six cylinder models. Except for the difference in power plants both chassis are identical in design and construction. Bodies to meet a wide range of delivery requirements are supplied for the $\frac{3}{4}$ -ton chassis.

Conventional models from $1\frac{1}{2}$ to $5\frac{1}{2}$ tons in size and the cab-over-engine trucks within this capacity range are of the same general specifications, the only difference being in the front-end construction. The conventional models in this group continue to feature the striking, streamlined styling created for Federal by Henry Dreyfuss, noted industrial de-

Federal

Adds three new package delivery units with ratings up to $2\frac{1}{2}$ tons . . . Conventional models from $\frac{3}{4}$ to 8 tons

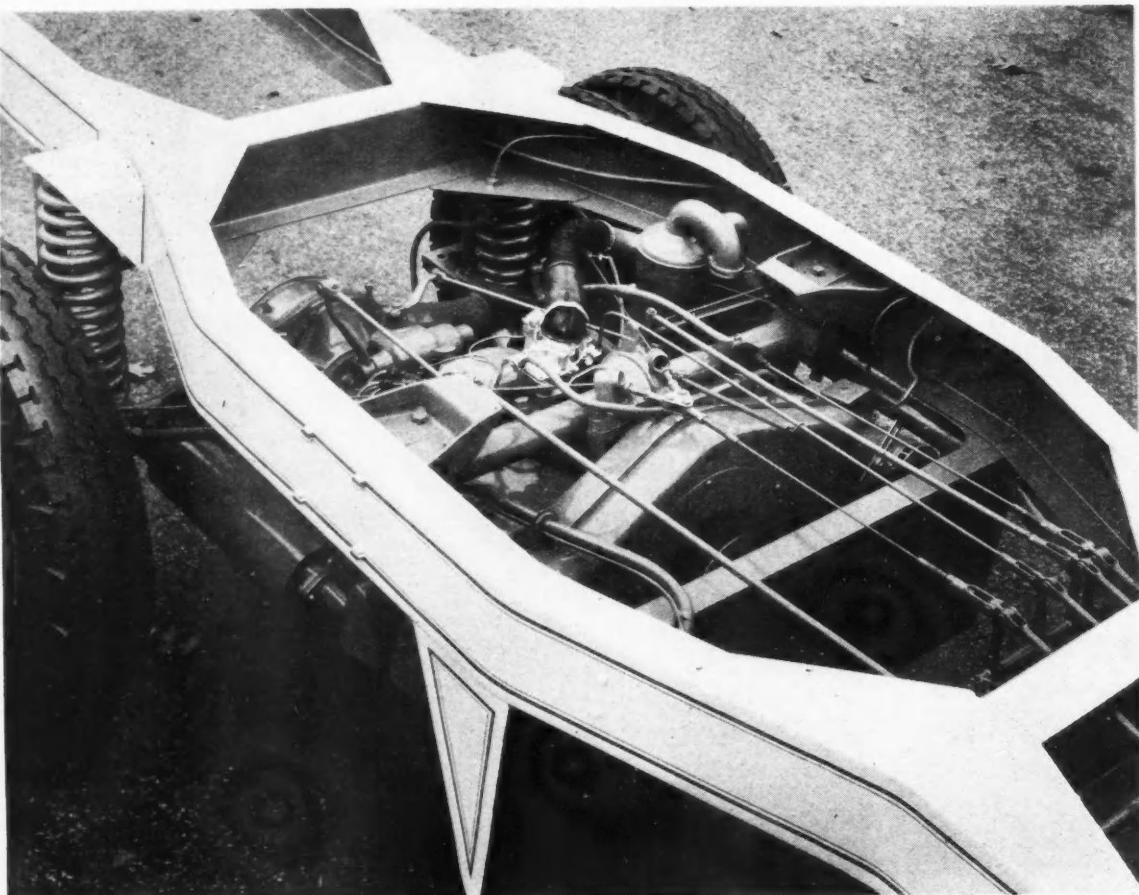


**Top: New Model 14 Federal...152-in. w.b....14 ft. body...1 $\frac{1}{2}$ to $2\frac{1}{2}$ -ton rating.
Above: Model 11 chassis showing forward-control lay-out...1 $\frac{1}{2}$ to 2-ton rating.**

signer. Cab-over-engine models are truly functional in design with a very attractive appearance resulting from a new styling originated by Federal.

The super heavy-duty models, ranging from six to eight-ton capacity, have a front end design of massive beauty in keeping with the character of big trucks of this kind. The extra heavy radiator shell, grille and bumper, all of which are chrome plated, emphasize the great strength built into these trucks.

Six-wheelers include conventional and cab-over-engine types with single or tandem drive. Timken rear-end units are employed on all of the six-wheel models. Cabs, especially styled to harmonize with chassis lines, are produced in Federal's own cab and body building division. For most models cabs are offered in standard type with a one-piece windshield and in deluxe type with a V windshield. Sleeper cabs are also available for long distance service.



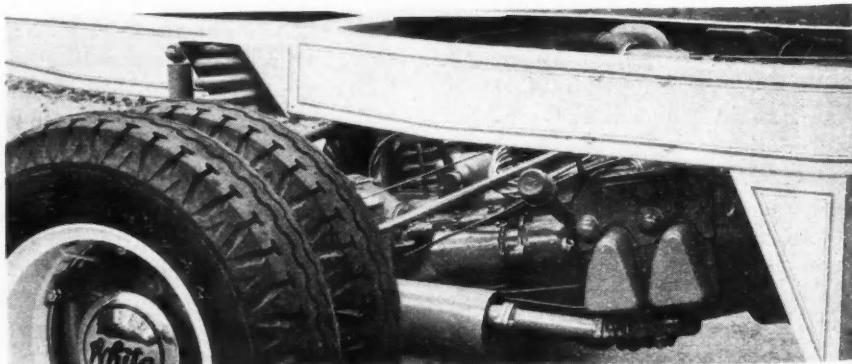
FIRST WITH AIR-COOLED

THE White Motor Co. announces the first air-cooled rear engine truck. The new model 200 is a unit with a 7-in. welded frame which will permit the mounting of any type of body. The wheelbase is 100 in. and standard tires are 7.50/17 with duals rear. The nominal rating is 1½ to 3 tons with a gross vehicle rating of approximately 10,000 lb.

The engine, mounted integrally with the rear axle, clutch and transmission as in original White Horse construction, eliminates 551 wearing mechanical parts used in the conventional truck chassis. The entire unit, including the rear axle, is easily removable and replaceable, greatly simplifying maintenance and making it unnecessary to tie up the entire truck even when major mechanical overhauls are in order. A substitute power unit is simply installed and the truck can go about its business as usual.

The model 200 is intended as a means of reducing costs in the general delivery field. During the last 20 years revolutionary methods in

White



troduced in production have reduced the cost of any manufactured article. However, while production costs were going down distribution costs were going up so that of an average sales dollar today 42 cents goes for production and 58 cents goes for distribution. This leaves plenty of room for reduction in distribution costs and the White Horse and model 200 were designed as a contribution in the direction of reducing the amount of money that goes to make up distribution cost.

The truck has ample power and speed for every light-duty truck need, without the wasteful high speed potential of modern passenger car type chassis. It is a specifically designed modern horse and wagon. The engine has four cylinders with a bore of $3\frac{7}{8}$ in. and a stroke of $3\frac{5}{8}$ in. The horsepower is 60 at 2500 r.p.m. and the torque is 125 lb. ft. at 1400 r.p.m. Aluminum pistons are standard and the compression ratio is 5.8 to 1. Inlet valves

have a diameter of $1\frac{1}{2}$ in. while the exhaust valves are $1\frac{11}{32}$ in.

Cylinders are nitrided cast iron sleeves in an aluminum block. The aluminum block together with an aluminum head gives a total engine weight which is actually lower than the earlier 150 cu. in. displacement air cooled engines.

The overhead valves are actuated by hydraulic lifters. Spark plugs are 14 mm and a series 20 Zenith carburetor is fitted. The crankshaft is Tocco hardened. Hardened valve seat inserts are used. Main bearings are $2\frac{1}{4}$ in. in diameter and connecting rod bearings are $1\frac{15}{16}$ in. in diameter.

Hydraulically-operated brake shoes are 14 in. by 2 in. on the front wheels and $15\frac{1}{4}$ in. by $2\frac{1}{2}$ in. on the rear. Optional gear ratios are 5.5, 6.1 and 6.5. The rear axle is full floating. Breakproof cables are used for the controls which eliminate clumsy mechanical couplings.

A streamlined cab is large and

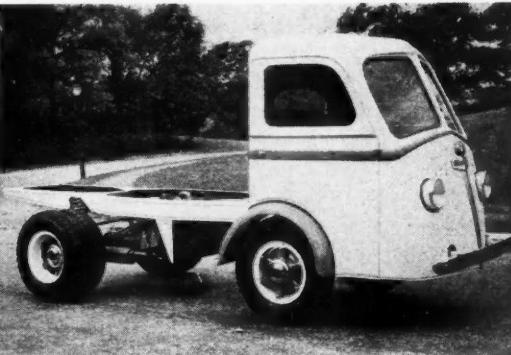
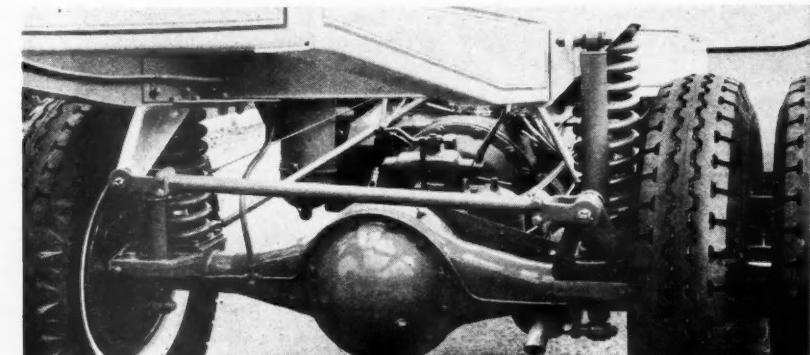
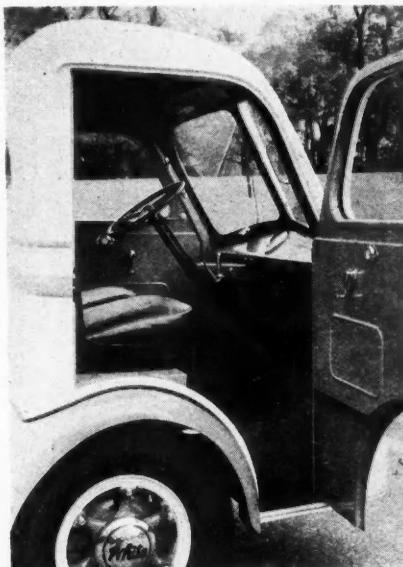
roomy for full-sized drivers. With the engine in the rear it is free of engine housings protruding into the cab. Conventional seats are used and from the driver's seat the vision is exceptionally good. The floorboards are clear since the shifting lever is mounted on the steering column.

One of the outstanding features of the cab is the press button control for door latches. From the outside it is only necessary to press a button to unlatch and open the door. The door springs open enough to make an outside handle unnecessary. The door can be closed without the usual slamming.

Axles are of extremely wide tread to permit an exceedingly short turning radius which is most valuable in cities where parking space is at a premium and this truck will be used most of the time. The forward position of the cab with its excellent vision should make for ease in handling in traffic and tight spaces.

REAR-ENGINE TRUCK

New 10,000 lb. gross weight general delivery unit has a 171 cu. in. air-cooled engine mounted just ahead of rear axle. Integrally mounted with clutch, transmission and rear axle, entire power unit can be easily replaced

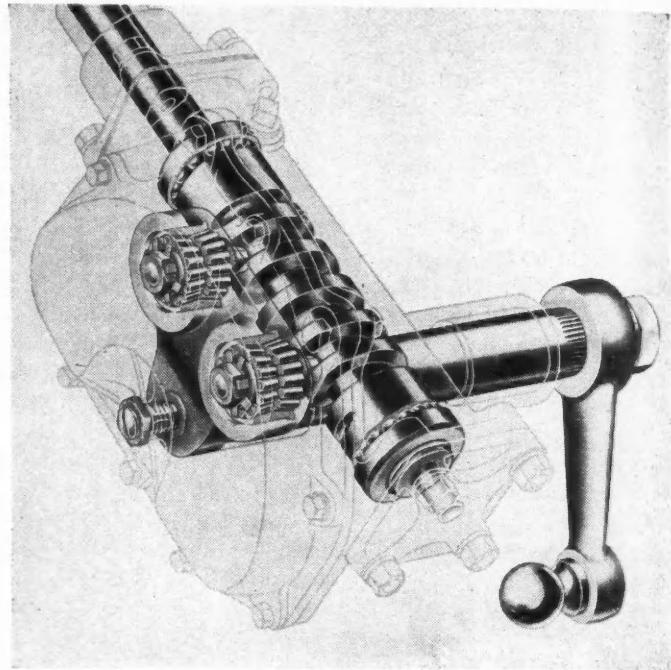


ROSS TWIN-LEVER STEERING GEAR

THIRTY to 40 per cent easier steering for heavy-duty trucks is claimed for the new roller-mounted cam and twin-lever steering gear just announced by the Ross Gear and Tool Co., Lafayette, Ind. In combination with easier, quicker maneuverability, the new gear provides complete stability for safety in high speed driving.

Three important advantages claimed for the new gear are: Positive steering control under all conditions; less tendency to oversteer on curves and when passing other vehicles at high speed; easier parking, without sacrificing quick, safe control for straight-ahead driving.

For operators who would like to compare the new roller-mounted twin-lever gear with the roller-mount-



ed single-lever gear, the following data indicates the advantages of the largest size twin-lever gear when compared with the single-lever gear of corresponding size: For the new twin-lever gear—wheel turns, 6.95; gear ratio, 27-23-27; arm travel, 100 deg.; average efficiency, 83 per cent.

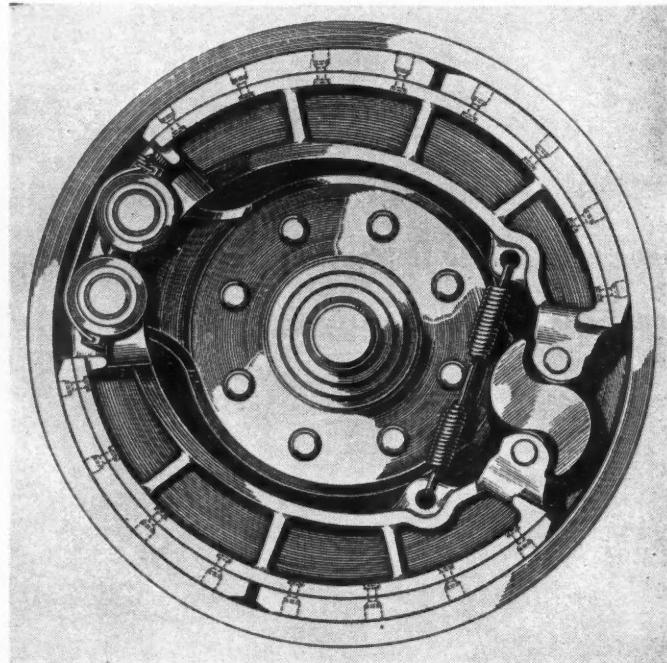
For the single-lever gear—wheel turns, 4.67; gear ratio, 21-26-21; arm travel, 76 deg.; average efficiency, 74 per cent.

The new gear retains the advantage of quick, accurate adjustment by means of a single screw and lock-nut which are easily accessible.

TIMKEN HEAVY-DUTY TRAILER BRAKE

THE Timken-Detroit Axle Co. has a new trailer brake designed exclusively for trailer use. The prime objective in the design of the new brake is the rapid dissipation of heat. To this end diameters have been reduced to 16½ in. The increased space between the drum and rim allows greater air circulation for cooling. The brake comes in 4, 5 or 6 in. widths depending upon the axle. Wide liners increase the contact area between drum and lining and permit a lower pressure per square inch which results in longer lining life and reduces fading.

The new brake is equipped with the Econoliner a brake lining tailored to fit the brake. The thickness of this lining varies from ½ in. at the ends



to ¾ in. in the middle so that maximum wear may be obtained. It is riveted to the shoe. Brake drums are of Meehanite.

THIRD axle manufacturers report that acceptance of six-wheel units improved appreciably during the past year and that they will redouble their efforts in 1940 to impress upon the fleet field the advantages of six-wheel trucks. The advantages they claim are:

1. Decreased deadweight and increased payload.
2. Lower first cost and depreciation.
3. Lower fuel and tire costs for increased capacity.
4. Increased safety factor and lower insurance costs.
5. Better load distribution and reduced road shock.

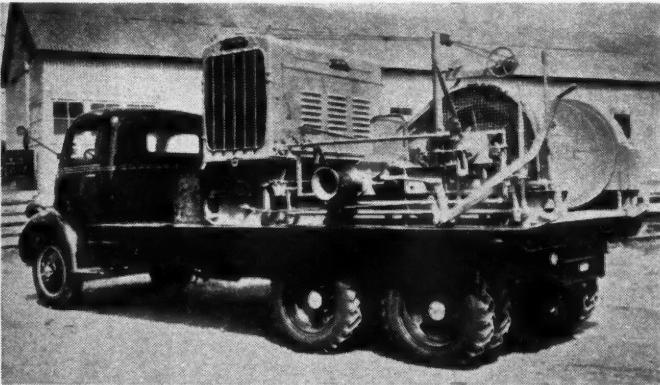
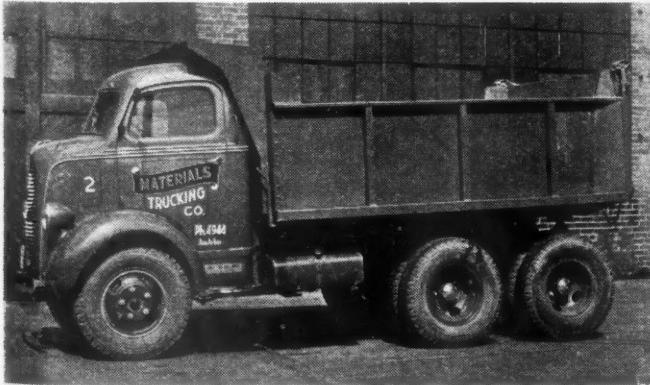
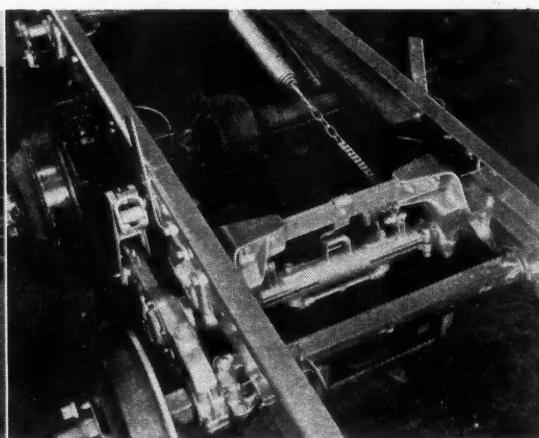
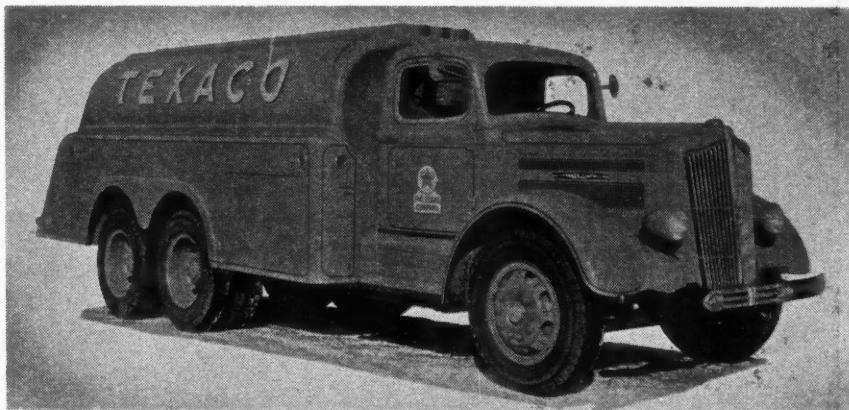
Right: The Texaco tanker has a Trucktor third axle on its White chassis. 31,600 lb. gross weight; 14,000 lb. pay load

Below: The Model 30 Truxmore unit on the Autocar increases the gross weight from 26,000 lb. to 36,000 lb. At right are details of new gravity spring suspension which has been enlarged 25%

Bottom left: New Grico two-axle drive on Ford C.O.E. chassis; 26,000 lb. gross

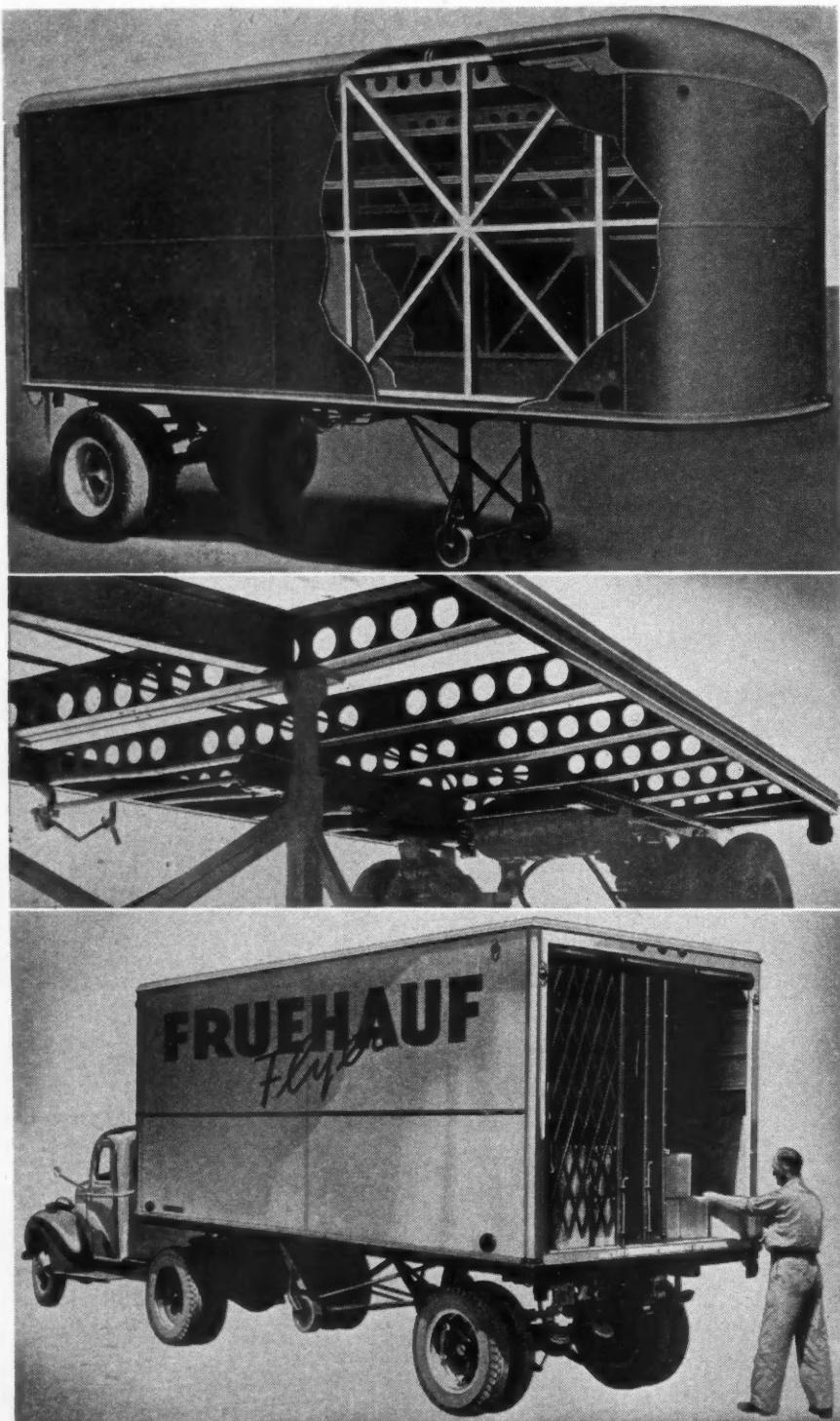
Bottom Right: The Gulf Oil scrubber is mounted on Fabco dual-drive Ford. A selector applies power to either one or both axles as requirements dictate

THIRD AXLES



FRUEHAUF

FLYER and AEROVAN



The first two views show the light-weight alloy steel construction of Fruehauf Aerovan and Flyer. Members are punched out as in airplane design. At bottom is the new Flyer

FRUEHAUF TRAILER CO. has a new trailer designated as the AFF and named the Aerovan which together with a 24 ft. body weighs only 6225 lb. as compared with 7755 lb. for the same vehicle of previous design. The new trailer in a 24 ft. length has a net payload of 20,000 lb.

By use of punched out, high yield point Yoloy steel frame members; square tube struts for greatest resistance to deflection; strong light-weight aluminum alloy side panels and scientific disposition of structural materials, the weight of the vehicle from 38 per cent of its rated payload to 31 per cent. The premium paid for this weight saving is approximately 20 cents per lb. Some aluminum trailers have cost as much as \$1 per lb. premium for weight saving.

In addition to the Aerovan, which is primarily for heavy trucking, the Fruehauf has announced a new trailer known as the Fruehauf Flyer. It is built for light, short wheelbase tractors to provide all of the maneuverability of the small truck in pick up and delivery services. It has the frame-integral tubular strut construction and a net payload of 12,000 lb.

The body is made of panels of stretcher level steel with integral water tight moldings backed by $\frac{1}{4}$ in. plywood. The roof is all-steel, rust proof. The body is made of built up sections which can be replaced from stock. This trailer sells for less money than any van type trailer in Fruehauf history.

HIGHWAY FREIGHTMASTER

Illustrations on this page show the new Highway Freightmaster, a view of the axle with progressive type flat-end springs and smooth construction of interior for unobstructed lading

IMPROVEMENTS in the new model Freightmaster "40," announced by Highway Trailer Co., Edgerton, Wis., follow trends set by other branches of the automotive industry.

Sturdy construction and beauty are features found in every detail of this model. Body panels are of special steel with finish comparable to that of the best automobiles. All joints of the smooth exterior sheets are protected by decorative metal strips. Smooth floor and wall construction eliminates cracks or obstacles on which lading might catch.

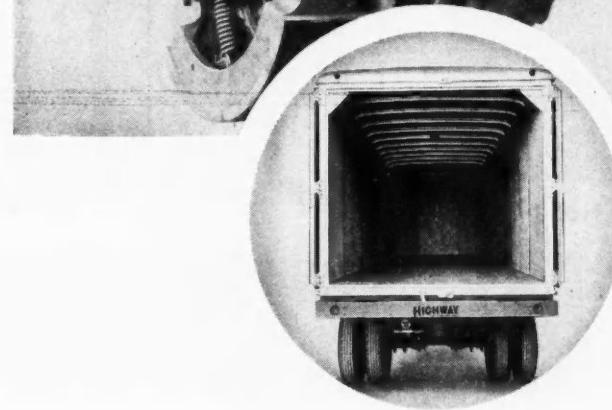
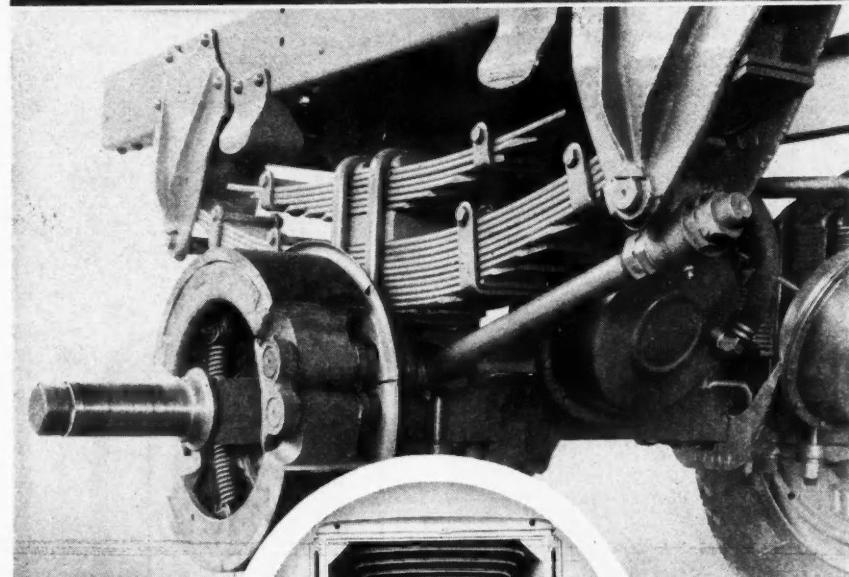
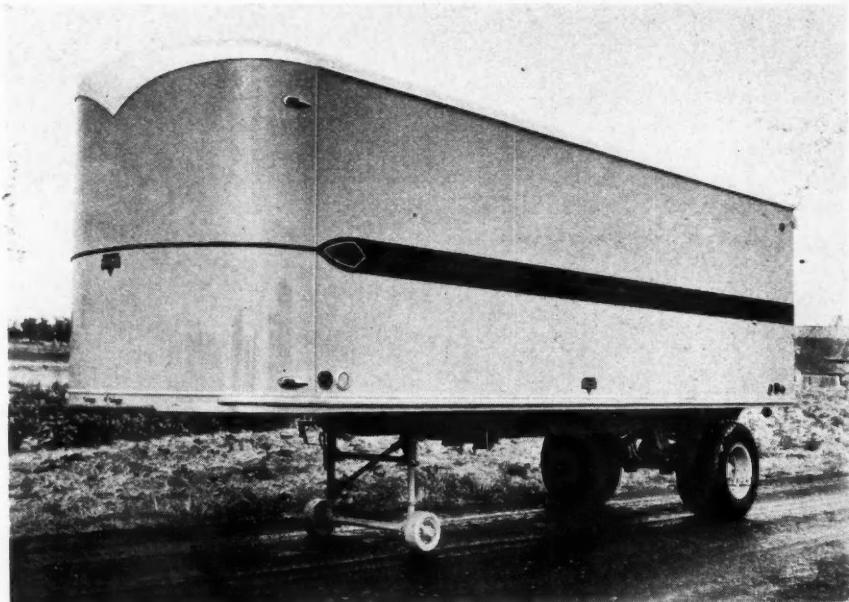
As standard equipment, the new Freightmaster has powerful, dependable, fast-acting Highway (factory built) mountain-type brakes, provided with slack adjusters for quick, easy adjustment.

Other features are the Highway heavy-duty axle, progressive type flat-end springs, adjustable radius rod construction, and Twin-Timken oversize bearings.

Modern automotive engineering, coupled with the use of special lightweight materials and other refinements in design, cut down weight.

The streamlined effect is carried through to the rear and is enhanced by flush-type doors, made possible by the use of the Highway concealed door mechanism, which eliminates all closing and locking obstacles.

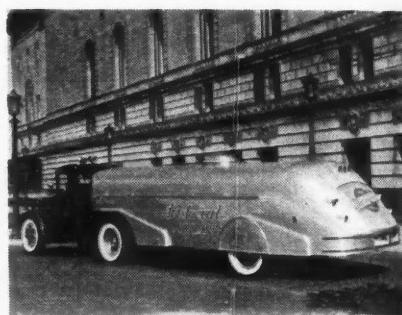
Line production methods are being used in the production of this new model, built complete, including body, in the plants of the Highway Trailer Co.





Above: A 24 ft. Kingham semi-trailer with Lindsay Structure body. Equipped with 3-in. insulation, and Kingham independent free rolling wheels and oscillating axles, it weighs 8100 lb.

Left: An insulated and refrigerated pre-fabricated Lindsay Structure body in operation by the Roegelein Provision Co. of San Antonio, Texas. Weight was reduced approximately 800 lb.



Above: The Heil-built stainless steel milk tank has 2500 gal. capacity in one compartment. There is a burnished aluminum outer cover and equipment for handling the load is in rear housing

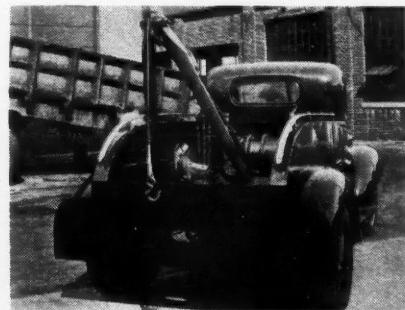
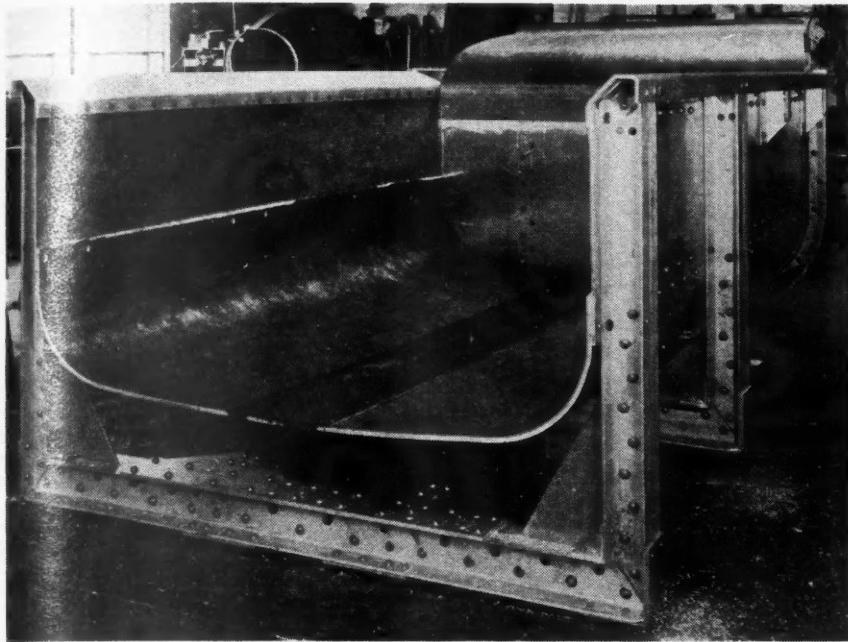
Left: This service station maintenance body made by American Coach and Body Co. is fully equipped with all tools and materials necessary for gasoline station maintenance. Named Model S-36



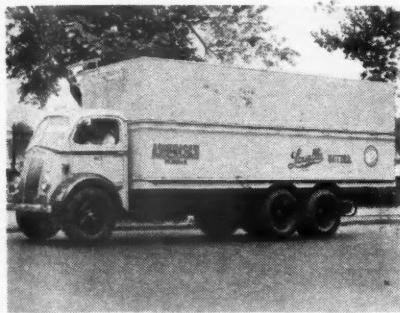
The Gerstenslager Co. built this body which is 11 ft. 5 in. long, 66 in. wide and 79½ in. wide. The entire exterior including the roof is steel and the jaw-type hood is counterweighted so that the driver does not have to lift all of the weight of the hood

BODIES

AND MATERIALS



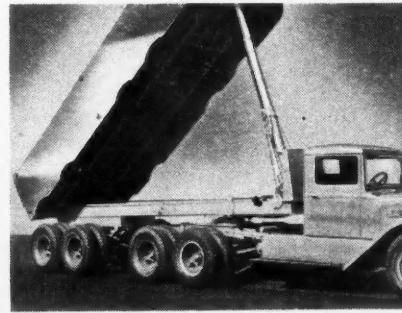
Above: New Gar Wood 3-ton Hideaway Wrecker is a complete package consisting of power winch, sheave block and body. When derrick is not in use it can be folded away out of sight



This American Stores body built by the Barry and Baily Co. is 22 ft. long, 8 ft. wide and 88 in. high. It is made of high-tensile steel and with full equipment it weighs 4020 lb. For finish it has American Stores yellow body and Kaiser green chassis



The Orville Body Co. specializes in sleeper cabs which enable a man to sleep comfortably. Equipment includes a large innerspring mattress and the doors and windows are carefully sealed against rain and cold. Steel roofs and braced oak frames add to durability



This 14 cu. yd. Gar Wood dump body made of Cor-Ten steel weighs 3290 lb. instead of 4343 lb. which it would weigh if it were made of ordinary mild steel. The reduction in weight permits a saving in operation which justifies a higher original cost

THERE is a definite trend in the commercial body business toward the use of pre-fabricated bodies or the use of elements which are delivered in such form that they can be readily incorporated in bodies without specialized knowledge or tailoring. This makes possible the use of production methods in making bodies and assures uniformity made possible by factory control and the elimination of

errors in judgment by the small local body builder or the fleet operator. Naturally the use of pre-fabricated bodies and pre-tailored materials makes possible the assembly of new bodies and the maintenance of old ones with less experienced labor.

The first step in this direction was taken by a producer of stainless steel panels of predetermined size which could be assembled into bodies of

various sizes with the help of a welding process. Early this year came the announcement of a complete package of structural members, panels and necessary fittings which could be assembled into a body of any given size by anyone capable of intelligently handling a wrench. A current announcement of standardized structural members gives impetus to the

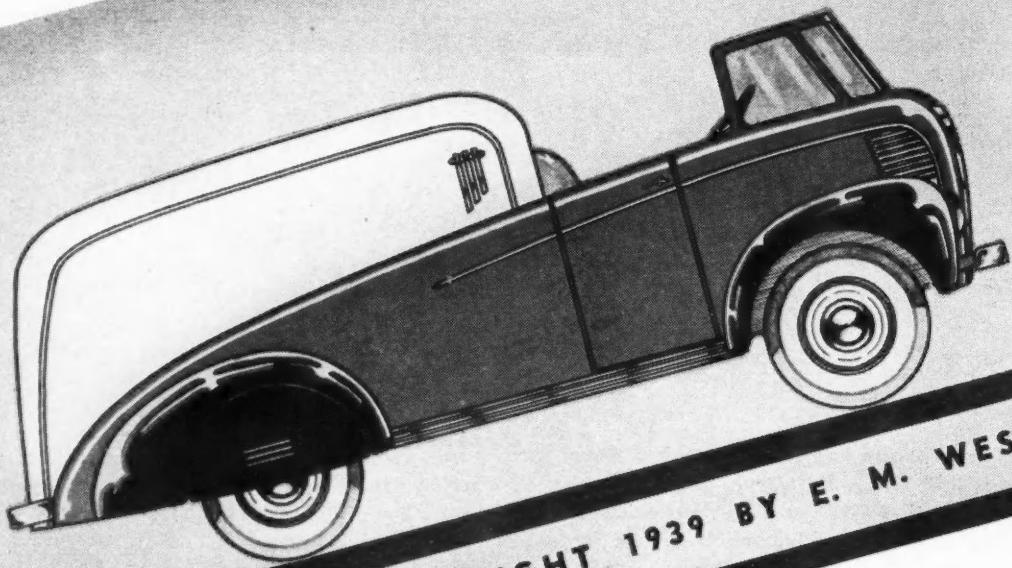
(TURN TO PAGE 164, PLEASE)

FOR TRUCK BODIES

THE

bodu

OF • THE • MONTH



PREPARED AND COPYRIGHT 1939 BY E. M. WESTBURG D

VOCATIONAL USES

All efforts in this month's design are directed toward creating a clean, attractive, attention-getting small merchandising car. The steady increase in these types of fleets and the great variety of designs have prompted the designer to combine the best points of all the units into one ultra-modern sales car. A second car of less radical design is also shown in the smaller photograph.

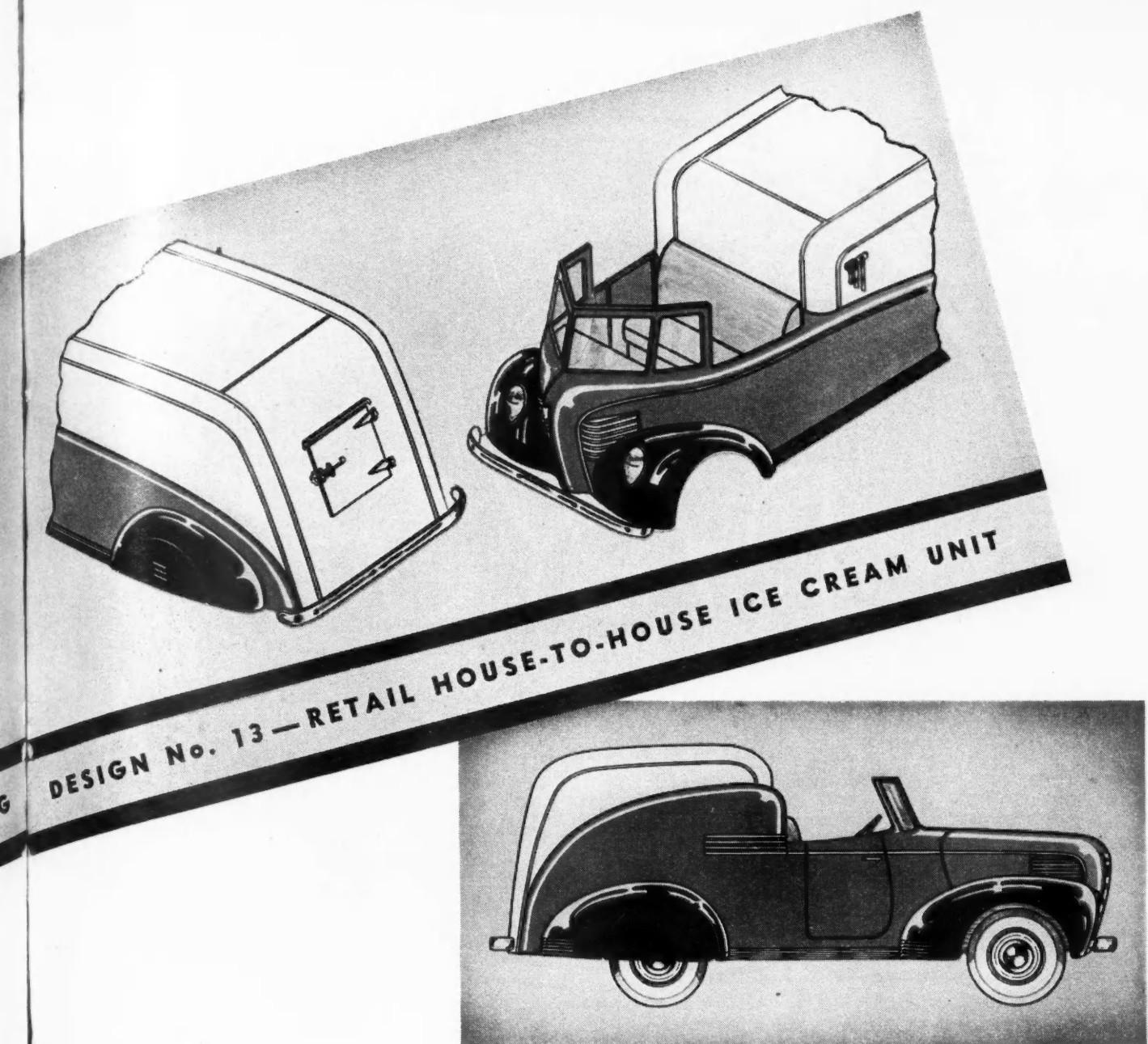
Although the designs shown are for ice cream delivery, the popularity of this type unit indicates that it would be practical for an infinite number of other small concessions as well.

This is the thirteenth in Commercial Car Journal's series of original body designs. Once again let us remind fleet-men that the designer has worked in body shops and knows the practical problems of building truck bodies. All designs are copyrighted but arrangements can be made with the designer for procuring complete construction drawings and specifications. For further details address The Editor, Commercial Car Journal, Philadelphia, Pa. In December issue—a rack side body

DESIGN FEATURES

The conversion unit, shown above, can be mounted on any of the small chassis now on the market of approximately 102-in. wheelbase and built expressly for cab-over-engine units. The conversion design is suggested because it has the same capacity as a conventional unit of about 24 in. greater overall length. Its efficiency is obviously increased in crowded quarters. Or, using the same overall length as the conventional type, body lines can be lowered and given a more rakish appearance thus increasing its sales appeal.

The more conventional unit shown also incorporates advanced styling



and meets a need for maximum appearance combined with greatest economy. It shares with the c.o.e. job in all of the features outlined below.

DETAIL FEATURES

Running boards are eliminated and replaced with stainless steel snap-on moldings. Streamlined fenders are suggested with the rear ends vented. This effect can also be attained by using polished aluminum moldings.

Electric chimes are shown and suggested to replace the harsh gongs, horns or jingling bells which are now most commonly used.

Chrome-plated spring bumpers are used in front and rear. The driver's

seat is upholstered with natural color, genuine leather. Only one door on the curb side is used to give a clean side without the break in the lines caused by doors.

The usual folding curtains are suggested to close in the driver's compartment when necessary.

BODY MATERIALS

Two types of construction are suggested. First, the conventional oak framing with body steel over plywood. Insulation would be Dry-Zero or glass wool, with cork in the floor. The inside lining would be of rust-proofed steel. As an alternate the body proper could be built entirely

of balsa wood with hardwood inserts for support of panels and hardware.

The streamlining on both designs is effected by a section down both sides of the body, outside of the regular body panels. The sweeping lines and contours are easily and inexpensively constructed from laminated wood rails covered with drawn sheet metal sections.

COLOR SCHEMES

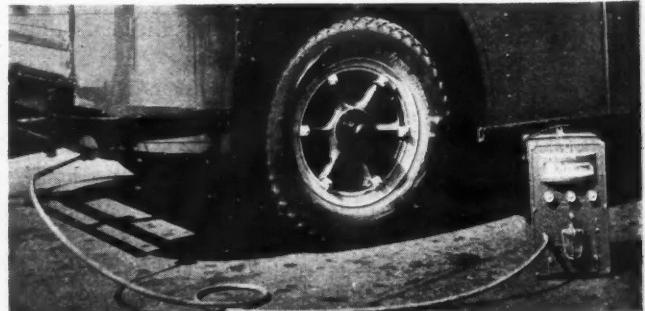
The color layout best suited for this design would be dark blue fenders with a lighter shade of blue on the lower portion of the body with the upper part of the body white. The wheels and striping should be yellow.



EXHAUST GAS ANALYZER

"A gradual increase in gasoline mileage from 5.3 miles per gallon in 1935 to 7.4 miles per gallon in 1938 is the result of better driving on the part of our drivers in conjunction with the consistent use of the exhaust gas analyzer which gives us an accurate check on mechanical adjustments necessary and the replacement of old trucks with new equipment."

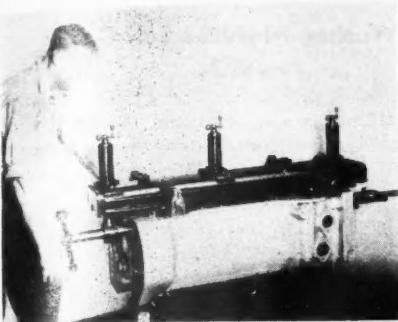
A. T. Frost, Kristoferson's Dairy, Seattle, Wash.



MOTOR ANALYZER

"Once a week trucks are given a motor tune-up. A motor analyzer is used to check the carburetor, plugs, points, fuel pump valves, etc. Despite a rise of 2 cents in the price of gasoline our mileage costs have remained stationary at .0128 cents. This has been brought about by an increase in miles per gallon from 9.33 in 1933 to 10.88 in 1938." - - - -

F. R. Ward, Mistletoe Express, Oklahoma City, Okla.



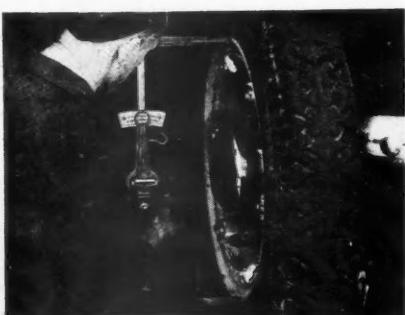
ALIGN-BORING FIXTURE

"For boring seven main bearings we formerly paid \$28. We purchased what we think is the best make of align-boring fixture for \$625. We now fit and bore main bearings for a labor cost of \$3 each which resulted in a saving of \$625 the first year besides paying for the fixture. We now have fitted and bored 220 sets of bearings, resulting in a net saving of \$4,775."—E. P. Morgan, Adley Express Co., New Haven, Conn.



POWER WASHER

"After several painstaking tests we decided upon a suitable washing solution. A high pressure washer was installed and that along with other improvements such as more and better brushes, sponges, lighting, etc., enabled us to increase the number of wash jobs per man from 20 per day to 35 per day in spite of the fact that working days were reduced from 9 hours to 7½ hours per day."—G. E. Larsen, Ward Baking Co., Chicago.



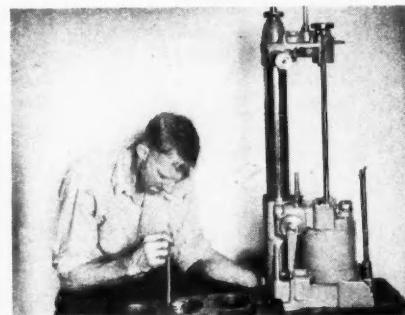
FRONT END EQUIPMENT

"We check each vehicle for camber, caster and toe-in each month. We would have to pay plenty for this service outside our own shop and the regular inspection saves on everything."—Baltimore Bakery responding to confidential questionnaire.



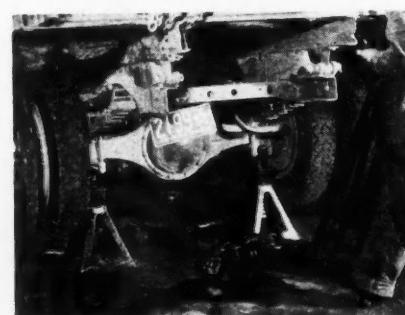
SPRAY GUN AND COMPRESSOR

"By use of synthetic enamels and purchasing a spray gun for \$35, an air compressor for \$165, six floodlights and a drop curtain, we were able to do the painting in our own shop. This formerly cost us \$50 to \$100 per truck when farmed out, but now with a little additional help we are able to do this work and improve the appearance of our fleet at a considerable saving."—A. C. Shonek, Penn Traffic Co., Johnstown, Pa.



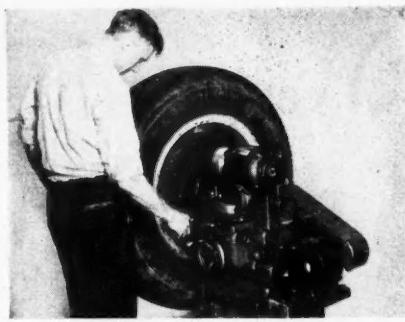
CYLINDER RECONDITIONERS

"We formerly paid \$15 for having a six-cylinder motor block reground, re-bored or honed when it was done outside. We purchased a well known make of cylinder boring bar and cylinder hone for \$425 and found that our labor cost for reconditioning six cylinders was \$2.80, saving \$12.20 on each motor. Since using this equipment we have reconditioned 302 six-cylinder jobs, resulting in a net savings of \$3,259.40."—E. P. Morgan, Adley Express Co., Inc.



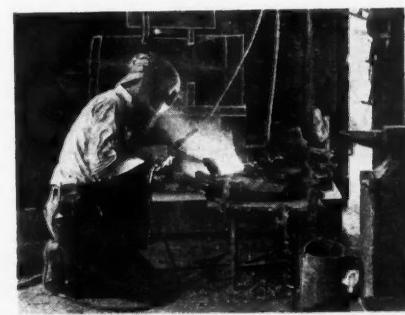
JACKS

"Give mechanics good jacks and keep them happy. Give them bum ones and see how quickly they go to pieces and take it out on the equipment."—Fleet operator responding to a Commercial Car Journal survey, confidential in character.



BRAKE DRUM LATHE

"Back in 1933 brake drums turned by outside shops cost us \$1.00 per inch. We purchased a drum lathe on which we could turn our own drums without removing the tires. We found we could machine our drums for a cost of about 20 cents per inch and we smoothed up a drum every time we relined brakes. This increased our lining life nearly 50 per cent and our drum life 100 per cent."—E. P. Morgan, Adley Express Co.



ELECTRIC WELDER

"An electric welding machine bought for around \$50 has much increased the shop's efficiency. When it was purchased no one in the shop had used one. But a little schooling and practice has made good welders of our mechanics. We now make our own gas tanks. A set of two costs us about \$35 installed and they are much more substantial than some commercial built tanks costing twice as much."—Fred Rice, Cushman Motor Delivery, Chicago.



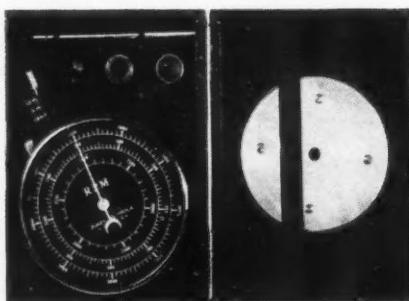
LIFT AND LUBRICATORS

"We replaced all obsolete lubricating equipment and installed a hoist to simplify the lubrication problem. We made lubrication easier. We immediately realized a drop in mechanical failures due to lubrication."—G. E. Larsen, Ward Baking Co., Chicago.

New SHOP EQUIPMENT

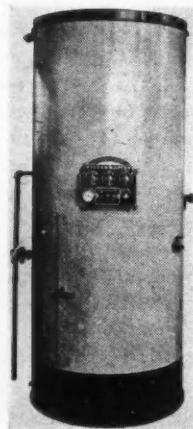
Multiple Range Tachometer

A new multiple range hand tachometer is offered by Jones-Motrola Sales Co., 432 Fairfield Ave., Stamford, Conn. It is of the portable, centrifugal type operating me-



chanically on contract with a wide variety of revolving objects. Speed ranges are 300 to 1200, 1000 to 4000 and 3000 to 12,000 r.p.m. Various adaptors are supplied.

Filtermaster Oil Conditioner



A new "Filtermaster" oil conditioner is available for shops interested in reconditioning their old oil. Claims for the device include neutralization of all acids, and 95 per cent removal of sludge by precipitation before the oil reaches a removable filter cartridge inside the device. Model B-25 filters 12½ gal. per day at a cost of about 9 cents per gal. (recovering about 90 per cent). Other models smaller and larger. Clean Oils Corp., 580 Fifth Ave., New York.

"Junior" Brake Shoe Fitter

A new junior model of the Kam-Way brake shoe fitter has been announced by the Raybestos Division, Raybestos-Manhattan, Inc., Bridgeport, Conn. The machine fits shoes to drum diameter accurately and with a gradual bending process and is said to eliminate most causes of chatter and rapid wear. The small machine handles everything the senior model does but with less volume per day.

Lempco Head Resurfacer

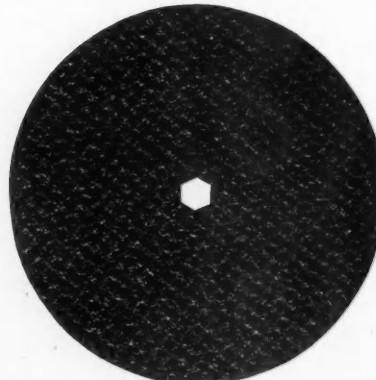
A surfacing machine, developed essentially for leveling out warped, distorted or corroded cylinder heads has just been announced by Lempco Products, Inc., Bedford, Ohio. It can also be used for resurfacing cylinder blocks, clutch pressure plates and many other flat grinding operations. Basically, the machine consists of a flat abrasive bed on which the job is drawn back and forth by a reciprocating mechanism. The abrasive is an endless belt stretched taut along a level plate. As the job works back and forth with a swiveling motion, the endless belt slowly feeds around the bed to prevent filling up of the abrasive. The machine is designed to accommodate practically all passenger car and all but the heaviest truck cylinder heads and blocks.

New Arc Welder by Lincoln

A new 200-amp. arc welder of the Lincoln Junior type has been announced by the Lincoln Electric Co., Cleveland, Ohio. The welder is of the motor-generator D.C. arc type with variable-voltage control and can be used with either bare or shielded arc electrodes. It has a current range of 60 to 250 amperes for welding duty and is claimed to be able to weld virtually all metals and alloys and do hard facing work.

Sioux Phenolic Disc

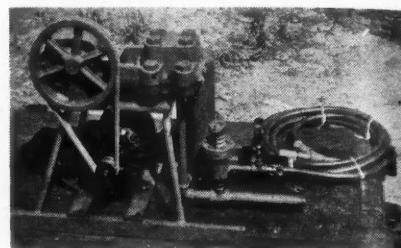
A new Sioux Phenol Abrasive Disc for use on paint, wood or steel has been an-



nounced by Albertson & Co. of Sioux City, Iowa. It combines a square-raised surface with a heat resisting phenolic resin which reduces loading to a minimum and is claimed to give a faster and cooler sanding disc. The backing is a phenolic fiber impregnated with resin which renders it unaffected by water and moisture.

Washer Features Self-Oiling

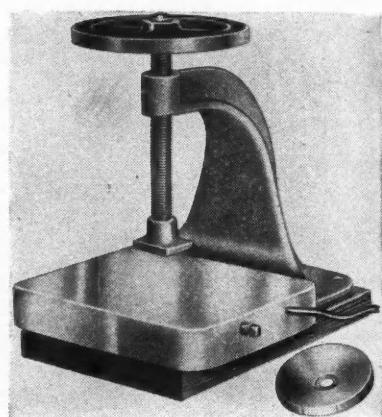
A self-oiling hydraulic car washer is the newest product of the Curtis Pneumatic Machinery Co., St. Louis, Mo. It is available in four sizes covering the requirements of smallest to the largest fleet establish-



ments. The new washer embodies such features as brass lined cylinders, double acting slow-speed two-cylinder pump, and "V" belt drive.

Chase Tube Plate

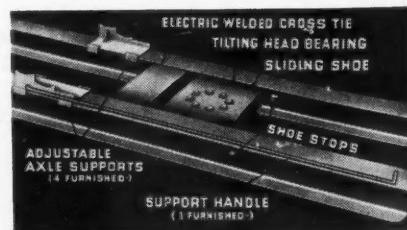
A truck tube plate, designed to repair even the heaviest truck tubes and suitable for side wall repairs on tires up to 600-16, has been put on the market by the Chase Mfg. Co., St. Louis, Mo. The plate, known



as Type T, measures 8 in. x 10 in., and is equipped for the attaching rubber valve stems. Automatic in its operation, it is said to have no surge in temperature when heating up.

Tilting Truck Lift

A recent development of interest to fleet men is a tilting head available for Joyce two-post hydraulic lifts. This new feature permits one end of the truck to be raised or lowered to any desired height for convenient work on tires, wheels, brakes, etc. while the other end of the lift is held stationary. The amount of rise of each



piston is governed by oil line valves. Joyce-Cridland Co., Dayton, Ohio.

(TURN TO PAGE 167, PLEASE)

THE Parish Pressed Steel Co. of Reading, Pa., has developed a new line of Universal Body Sections which are now available to body builders. It is no longer necessary to contend with the difficulties of pulling materials into shape at erection due to the inaccuracies of forming. The Universal Body sections are all accurately die formed in power presses of sufficient capacity to shape this new high strength steel into the desired sections.

These sections have been designed to take full advantage of the welding properties of the material from which they are formed. Welding properties of this material have been proven by tests to be superior to those of mild steel, yet this material has an elastic limit of 50,000 lb. per sq. in. and ultimate tensile of 70,000 lb. per sq. in. Due to the highly elastic and favorable welding properties, a monolithic type of arc welded frame can be developed which permits simplicity of joint construction and rapid fabrication of the parts.

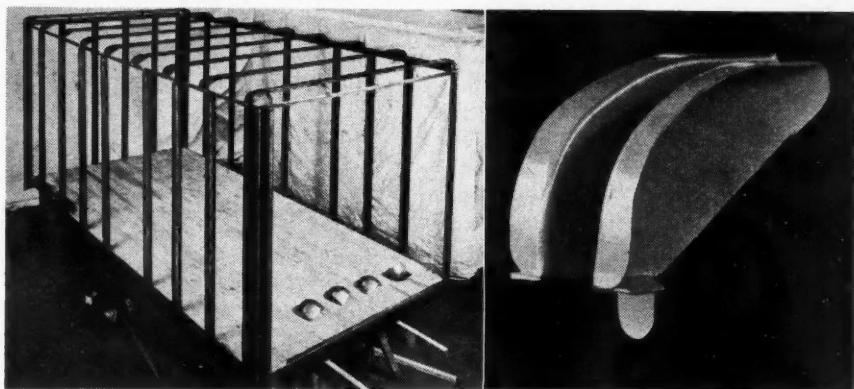
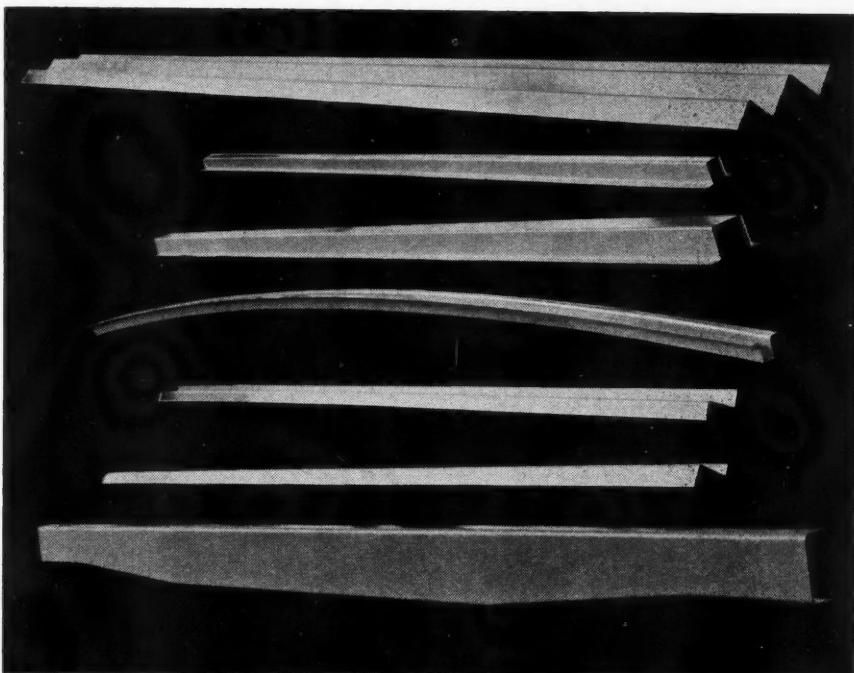
Mild steel welding rod of any of the recognized type, because of the increased cross section and alloying with the parent metal, has sufficient strength to give satisfactory service life. No change in welding technique is necessary, and welds made by experienced welders on light metal work without any previous instruction have been found to be uniformly sound and satisfactory.

This development is not to hold the body builder to any one set type or design. It is intended to place a material in his hands which will suggest various applications to suit as many as possible of his problems in body frame construction and at the same time to make it possible for him to take advantage of mass production economy in his purchase of a suitable light weight material fabricated from the new high strength steels.

Parish Universal Body Sections are formed in standard lengths and can easily be cut to the lengths desired at each individual assembly. A straight cut off to length is the only operation required in preparing this material for assembly. Notching and cutting away for joints has been eliminated either by the use of suitable brackets or by forming the material to sizes which fit together. Here the value of accurate die formed parts is apparent.

Universal **BODY SECTIONS**

Parish offers wide variety of preshaped units of high-tensile steel, furnished ready for welding in body shops



Top: Seven of the preshaped forms now available for various body members.

Above: A completed body frame and a corner shape which permits rounded roof

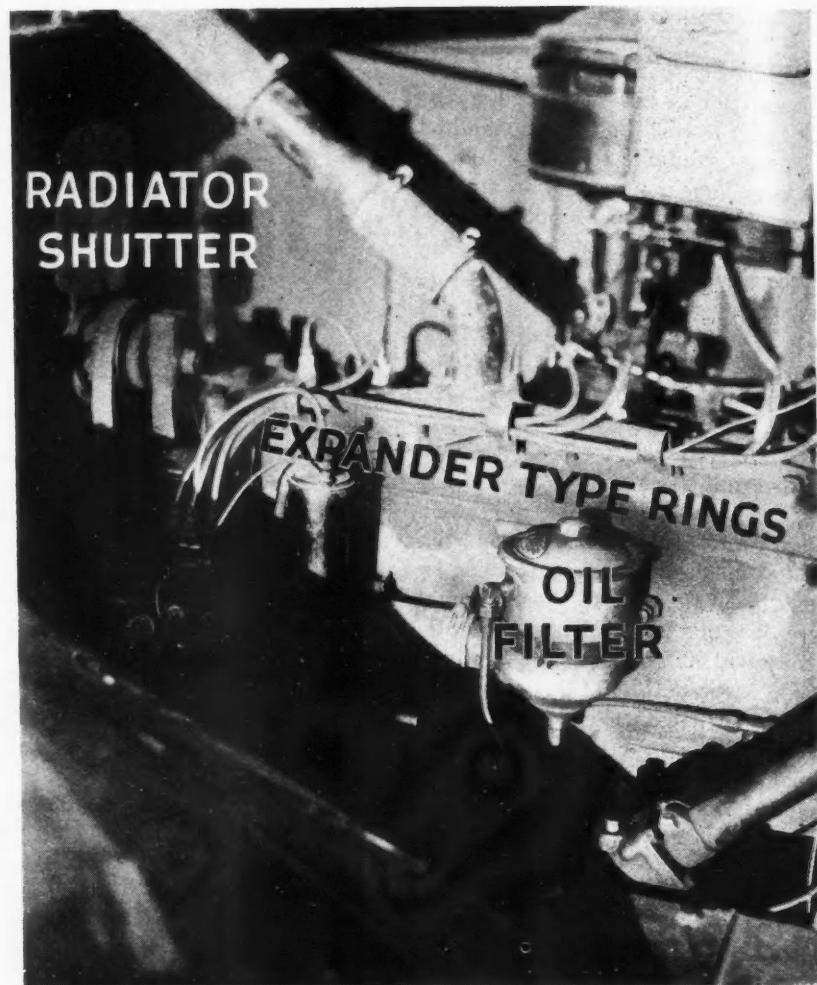
IT is not what the fleet operator buys that keeps his operating costs from being as low as they should; it is what he does not buy that prevents the maximum possible economy. It is impossible to buy a bad truck because all trucks today are made by reputable manufacturers. However, there are sufficient differences to make a wise selection for the work at hand pay dividends.

Competition has brought the cost of new trucks into fairly close alignment with one another and while there is still room for varying ideas concerning which type of truck can most economically do what kind of work, it will be pretty generally conceded that you get what you pay for. This would indicate that the greatest opportunity for saving money would be in the method of operation of the trucks once the fleet operator has them.

Efficient operation depends largely upon the ability of the operator to recognize a problem when he has one. It can be taken for granted that when he knows about a problem he will do something about it, but it is also his responsibility to study his operation to determine what his problems are.

The purpose of this article is to point out a number of common fleet problems and to show that there is an accessory available which will help in the solution of that problem. For this purpose we cannot assume any specific set of conditions which would be peculiar to one fleet and not to another, so we simply take the biggest expense (therefore the greatest opportunity for waste) first.

The largest share of the operating dollar goes for drivers' wages. Naturally the question arises, "what can be done about it?" So far as eliminating it as the biggest expenditure, the answer is, "nothing." But fleet operators can make sure that they get the best possible day's work from each driver and consequently from the truck which he drives. Naturally every fleet operator selects the best men he can. But then what? Even the best of men fall into bad habits when they are not under constant supervision. This, providing that they are men who are sincere in their desire to provide an honest day's



for economy and

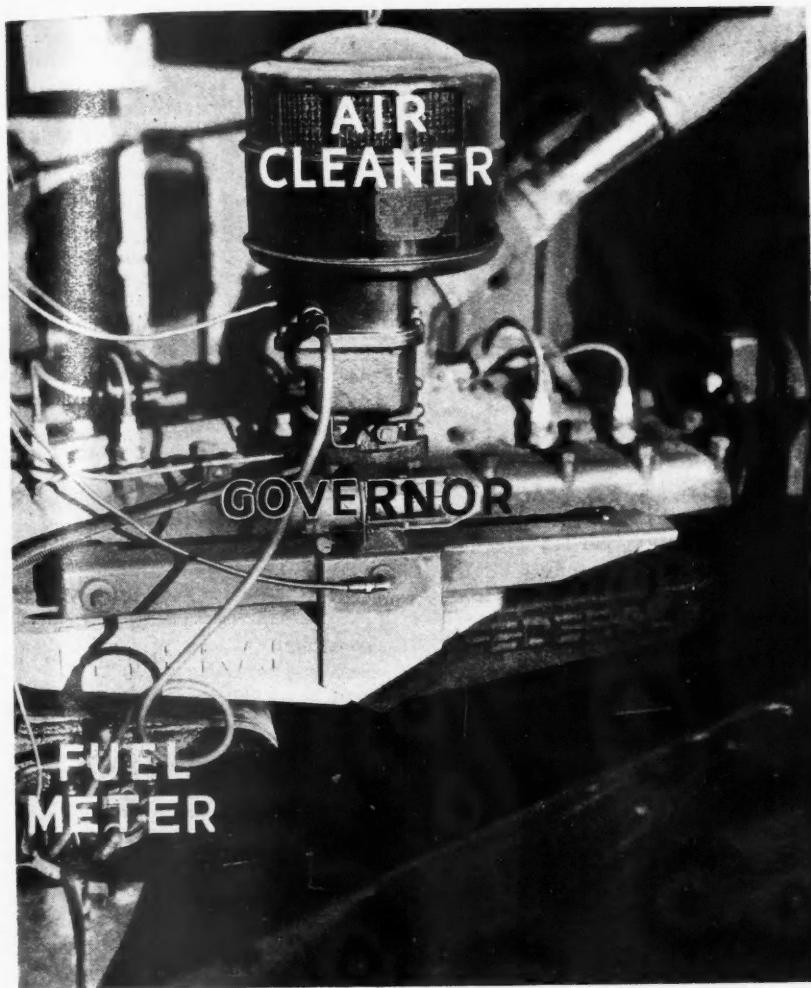
work. Every now and then the fleet operator will be fooled by a driver who never intends to do a good day's work but who is a good actor when he is under the supervisor's eye.

The history of industry proves that employees need supervision and fleet operation is no exception. To supervise drivers 100 per cent would re-

quire as many supervisors as there are drivers. The cost of such a staff would be prohibitive. When a few men in supervisory capacities think that they can really know what a large number of drivers are doing they are kidding themselves.

There is one large operation in the East which makes a great point of

For every problem the fleet operator has to lower costs or better his



efficiency

operating over a wide area without driver supervision. The records of the company show that it is the exception rather than the rule when a driver turns up at a terminal on schedule despite the fact that the schedules were arrived at by a reasonably good time study. Management in this case has decided that

highway transportation cannot meet a scheduled time regularly even though competitors are doing it over the same routes. What other truck drivers know is that these drivers have more and longer coffee stops than the others, that they frequently report for work counting on pulling off the road for a nap enroute and

that in so far as possible they make up for time lost by operating at a faster speed than the equipment is built to stand.

A recording device on each truck of this operation would bring up a lot of interesting questions which would in turn bring to light a great deal of information on why schedules could not be maintained. Since this company figures its trucks with drivers are worth about \$3 per hour it would probably be amazed to find that the drivers, through coffee stops, sleeping, loafing and horseplay are costing them about \$6 a schedule more than is necessary.

While this case is exceptionally bad there is much of it that applies to other operations throughout the country. Within six blocks of this publishing office 14 route trucks belonging to one company can be counted parked and drivers in a cafeteria. Regardless of the amount of time each one spends at his breakfast, which is eaten after he takes his truck from the garage in the morning, how can 14 routes be served by drivers who gather at a single location, unless some of them have strayed far from their work in search of company.

All fleet operators know that trucks have an economical operating speed and it is seldom as fast as drivers will push them when they are behind in their schedule or work for reasons best known to them. Most of the large trucks come equipped with governors because the manufacturers would not feel safe in guaranteeing their units without some speed limiting device. Results are probably not quite so severe and immediate on the smaller units but they suffer proportionately from overspeeding. Governors for safety reasons may still be open to argument but governors for maintenance, fuel and oil consumption reasons definitely fit into the driver supervision picture. A governor stops the driver from making the vehicle pay the penalty for his own shortcomings.

Another phase in which the human element can be checked and malpractice corrected is fuel consumption. The shop may work itself to death

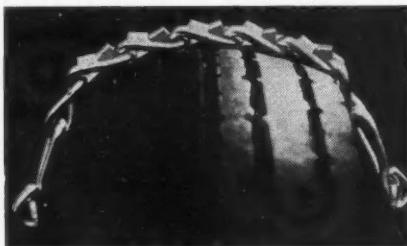
(TURN TO PAGE 84, PLEASE)

operating efficiency there is a practical accessory to help him solve it

Showcase of ACCESSORIES

New Lug-Reinforced Tire Chain

The International Chain & Mfg. Co., York, Pa., has announced a new addition to its Campbell line of tire chains. This new type, known as the Lug-Reinforced Chain has the reinforcing lugs as part of the chain links themselves rather than separate pieces welded to the cross links. Since there is no danger of reinforcing



lugs breaking off, they remain effective until the metal itself actually wears away. The shape and position of the reinforcing lugs are such that the cross chains present a saw tooth profile to the road surface and assure positive all-way traction.

Arrow Electric Flare

Arrow Safety Device Co., Medford, N. J., has announced a new electric safety flare,



streamlined in appearance and 7 in. tall with wide base for stability. A handy switch controls current for steady or flashing use and the unit is said to burn steadily with a No. 409 lantern battery for 30 hours.

Fram Hydro-Vent

A new device for crankcase ventilation, independent of road speed and other variables, has been developed by the Fleming Mfg. Co., Providence, R. I. Called the Fram Hydro-Vent, the unit is a simple fitting which is installed in the intake manifold system and connected to the breather by means of a suitable tubing.

Operation of the device depends upon the use of the Donaldson valve, a simple weight which moves up and down in the valve body under the influence of manifold vacuum. The upper end of the weight terminates in a two-step metering pin which fits in the outlet orifice. At low speeds

and idling when manifold vacuum is at its maximum, the weight is lifted to its extreme upward position restricting the orifice; at high speeds and open throttle, the valve drops down permitting unrestricted flow.

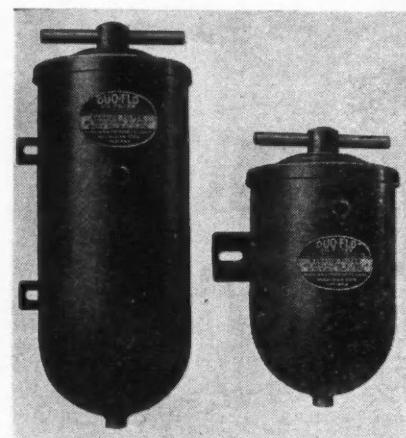
It is claimed that the device removes water vapor, fumes, acids and other products of combustion that find their way into the crankcase. At open throttle when blow-by is most severe, the valve permits an increased flow of gases from the crankcase to compensate for the excess by-products due to blow-by.

L-D Driving Lamp

The K-D Lamp Co., Cincinnati, Ohio, announces a new driving lamp, Model 807. It is built with deflectors having a series of 13 flutes in its polished surface which diffuses the light so that the beam strikes the road 75 ft. ahead of the car and the sides, ditches and turns are well lighted. The bulb is pre-focused. The light has been passed by the Electrical Testing Laboratories and has the approvals of most states. Approval from remaining states is pending.

Michiana Oil Filters

Two new models for light and heavy duty have been added to the line of H.W. Duo-flo filters manufactured by the Michiana Products Corp., Michigan City, Ind. The removable elements are of the Duo-Flo double-depth design and are easily replaceable through the removable top. Part of



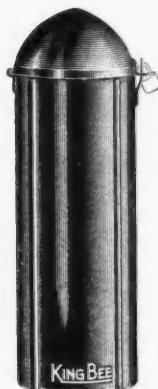
the oil entering at the bottom passes through the lower filter, the rest through the upper filter.

Weed Dual Tire Chain

An improved tire chain designed for dual truck tires is being featured by American Chain Div. of American Chain & Cable Co., Inc., Bridgeport, Conn. It is called Weed American Bar-Reinforced Dual Pneumatic with Triple Side Chain. An important feature is the welded triple-side-chain construction, which holds the bar-reinforced cross chains snugly against the tire. The snug-fitting feature, combined with the fact that the cross chains are staggered, gives "caterpillar-like" traction. The cross chains are bar-reinforced with bars "double-welded," that is, welded at the crown on each side of the link.

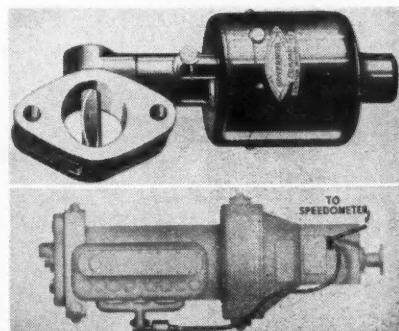
King Bee Flare Set

A new King Bee Streamlined Leak-Proof Flare Set, No. 275, features a container which entirely covers the flares. It is constructed in sizes to accommodate either two or three Ace flares. The casing has a spring tension which eliminates vibration. Made by American Automatic Devices Co., Chicago.



Road Speed Governor

The Pierce Governor Co., Anderson, Ind., announces a mechanical (fly-ball)

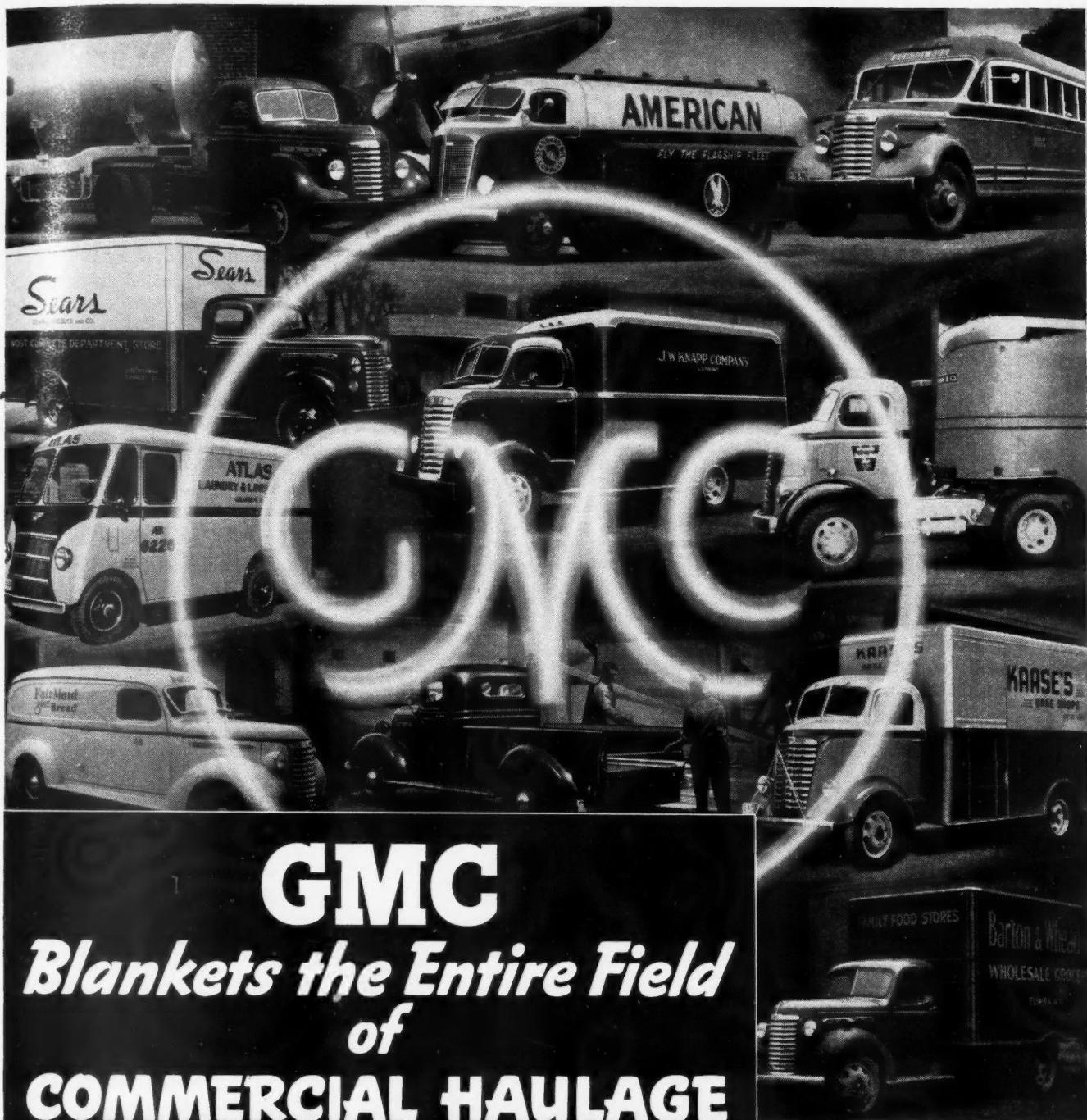


governor, known as the Pierce Zone Control Automatic Road Speed Governor which controls the road speed of the vehicle only.

The device, which consists of the governor, a flexible shaft and tube assembly, and a dual transmission drive joint, controls the road speed in high gear, permitting the operator to get the full benefit of the peak horsepower of the engine when the vehicle is being operated in the low or intermediate gears.

A feature of the device is that it regulates the road speed of the vehicle at the governed speed point on the level, on up grades, and on down grades, also. An operator of a vehicle equipped with it cannot coast down steep grades at high speed. On down grades the governor will cut off the supply of fuel to the manifold, while the engine will act as a brake.

(TURN TO PAGE 176, PLEASE)



GMC
*Blankets the Entire Field
 of*
COMMERCIAL HAULAGE

• THE TRUCK OF VALUE •

GMC Gives You a Better Truck for Your Needs. Better-Powered—with a GMC Super-Duty Engine that accelerates faster, pulls better, saves more gas! Better-Sized—you don't have to put up with a truck that's too small for your loads, or too big for maximum economy! Better-Engineered—GMC delivery trucks are built like the giant GMC Road Monarchs that shoulder America's toughest hauling jobs! Put GMC trucks on your hauling jobs and SAVE!

Our own YMAG Time Payment Plan assures you of lowest available rates

GMC TRUCKS TRAILERS - DIESELS

NEW 3 TO 4-TON WALTER DIESEL



MODEL ADN, a new diesel-powered truck of 3 to 4-ton nominal capacity, has been announced by the Walter Motor Truck Co., Ridgewood, L. I., N. Y. The power-plant is a six-cylinder Cummins engine of 100 hp. The unit is intended for highway maintenance and snow removal and with semi-trailers of 10 to 15-ton capacity.

Like all Walter models, this unit embodies four-point positive drive with three automatic lock or torque proportioning differentials and a suspended double-reduction drive. The transmission provides six forward speeds and two reverse with a single lever control, giving ample range between high and low and close spacing of intermediate speeds for efficient operation of the diesel engine. This model has a set-back-axle construction with ample body space, giving short turning and easy maneuvering with better weight distribution.

NEW AVAILABLE TRUCK-TRACTOR

THE Available Truck Co., Chicago, Ill., announces a new model WS-255. With full equipment, including cab, in a 108-in. wheelbase tractor, it weighs 7000 lb. It is also available as a truck in wheelbases to accommodate a 12, 14 or 16-ft. body.

This model is powered by a 320 cu. in. Waukesha engine having a bore of 4 in. and a stroke of 4½ in. There are 7 main bearings of 2½ in. diameter, a 13 in. clutch and a five-speed transmission with helical gears and an overdrive. It has a 33000 Timkin front axle with a 71 in. tread and a 56410 Timken rear axle. Electrical system is Delco with a 200-watt 6-volt generator with voltage control.

Spicer needle bearing universal joints are standard with 9.00/20 tires on 8 in. rims on Dayton steel wheels. Fuel tank holds 40 gal.



MARMON-HERRINGTON ALL-WHEEL DRIVES



THERE are more than 30 models of four and six-wheel drive trucks in the 1940 Marmon-Herrington line powered by Hercules gasoline and diesel engines. These units range in size from 25-ton capacity for trucks to 50 tons or more for tractors. They are designed for oil field transportation, logging, road building, snow removal and other difficult off and on highway services.

Supplementing this line the company located at Indianapolis, Ind., converts all standard Ford commercial and passenger cars to all-wheel drives thus giving the buyer the advantage of high tractive ability in medium and light-weight vehicles at low cost. Conversion of the Fords entails replacing the front axle with a driving axle as well as lengthening the chassis if it is to be a six-wheeler. Conversions have been completed to bring all 1940 Ford advantages to all-wheel drives.

DODGE

(CONTINUED FROM PAGE 39)

cowl, windshield cowl are offered in all wheelbase lengths; cab and platform and stake models are available on the 136 and 160 in. w.b. chassis. Engine horsepower is 99 engine; torque is 188 lb. ft. A reactionary type of booster valve replaces the former "dump" type for a better and smoother stop. Front spring bolt is enlarged in diameter from $\frac{3}{4}$ to $\frac{13}{16}$ in. Optional rear axle ratios are 5.111, 5.625, 6.285, and 7.166.

Three-ton models available in gasoline-powered and diesel trucks in conventional models available as cab and chassis, cowl with windshield and flat-faced cowl. The 3-ton chassis has a reactionary type booster valve, and 10 stud wheels as standard equipment. Wheelbase lengths are 152, 170, 188 and 205 in.

WILLYS

(CONTINUED FROM PAGE 46)

at both front and sides. The truck is equipped with safety glass throughout.

The vehicle weight is approximately 2400 lb. and carries a pay load of 1000 lb.

The truck is powered by the Willys four-cylinder "L" type engine, having a bore of $3\frac{1}{8}$ in., a stroke of $4\frac{3}{8}$ in. and a piston displacement of 134.2 cu. in. The engine develops 48 hp. at 3200 r.p.m. and the vehicle is capable of from 15 to 20 miles on a gallon of gasoline.

The engine has full pressure lubrication to all bearings on the crank shaft and cam shaft, with spray lubrication to the pistons, valve tappets and timing chain.

Clutch plate is a Borg-Warner and the transmission is a Warner product. The truck is equipped with a Spicer rear axle and Kelsey-Hayes wheels taking 6.00/16 tires.

MACK

(CONTINUED FROM PAGE 44)

panels on the outside extending approximately 13 in. from the ground.

Belt molding and swipe rails are metal, and the wheelboxes are 18-gage steel. The body interior is metal-lined, and the floor is one-piece with elm facing. Roof is of all-steel construction with insulation.

Two sliding 28-in. doors having 68-in. headroom to the lower step enable the driver to step in and out of the truck on either side. At the rear of the body, located in the center, is a standard equipment door which rolls up and which is 42 in. wide and

has a 54-in. opening.

Further enhancing the safety and completeness of the new Mack "Retailer" are such standard fittings as front and rear spring-type bumpers with step plate at rear, shatter-proof glass throughout, dome light on roof inside the body, two rear view adjustable mirrors, two electric automatic windshield wipers, package compartment over driver, and an insulated and gasketed motor hood which is easily removable.

**HERE'S WHAT
INSURANCE COMPANIES
SAY ABOUT THE
*Servis Recorder***

**These are from
actual letters:**

- "You are quite right—we do insist that quite a few of our assureds adopt the Servis Recorder in order to eliminate the driver stopping an hour or so and then getting out on the highway and burning up the road in order to arrive on schedule. The latest lines on which we have required Recorders are the _____ of Chicago and _____ of Detroit."
- "Please get in touch with the _____ and try to get the Servis Recorder as standard equipment upon their units, as we have been having some difficulty on this line and I believe it would be of material assistance to them in the reduction of accidents if they would equip their outfits with Servis Recorders and then make an intelligent use of them."
- "I see that you were able to sell the _____ quite a few recorders, and there has been a marked improvement in the operation of this line."
- "We will appreciate it very much if you will send your pamphlet 'About Motor Trucks that Speed and Have Accidents' to the _____ Company of Detroit, Michigan, _____ of Indianapolis, Indiana, _____ of Kansas City and _____ of Detroit. I would certainly be pleased if they would install Servis Recorders and any help that you can give to get them to do this will be more than appreciated."

"Making Up" Wasted Time Causes Most Speeding—and Speeding Causes Most Accidents.

Send for our "ACCIDENTS" folder.

**THE SERVICE RECORDER CO.
1422 Euclid Avenue, Cleveland, Ohio**

The Servis Recorder
Helps Prevent Speeding and Accidents

CHEVROLET

(CONTINUED FROM PAGE 37)

of an improved ride.

While the engine remains the same in size and basic design there are several design improvements. The oil pump has increased capacity as a result of the use of wider faced gears and a larger pipe to the screen. The oil pump distributor body is now integral with the crankcase with a cover over the opening.

A wick type oil retainer has replaced the oil slinger at the rear main bearing and the rear main bearing cap has four hold down bolts instead of two and in addition is aligned by two dowels.

Tappets have been redesigned to permit shortening the pushrods about 2 in. so as to increase stiffness. The push rod seat is moved from the bottom to the top of the tappet where the contact surface is a separate piece of hardened steel. Both ends of the pushrod have been hardened as have

the valve tips. Rocker arms have been heat treated to increase the hardness of the bearing surfaces.

The clutch has radial slotted facings and clockspring steel cushions between the facings. The clutch fork and pull back spring have been changed to accommodate the new pedal position. Both clutch and brake pedals are now stampings instead of forgings.

The battery hanger, on the heavy duty conventional and cab-over-engine trucks, is moved 2½ in. to the rear for clearance with the transmission. A brace to the side rail is added. Heavy duty conventional and cab-over-engine trucks have a stronger, more rigid frame because of larger side rails. Both the upper and lower flanges of the side rails are increased in width from 2⅜ to 2⅓ in.

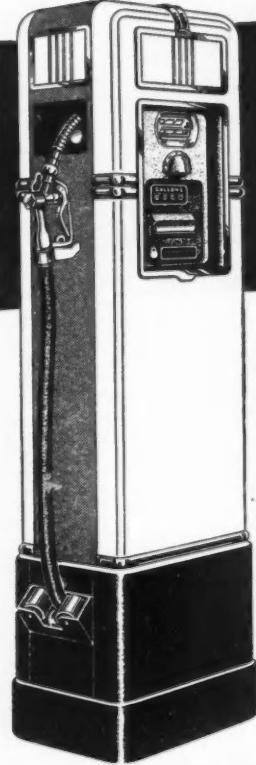
All trucks will have hypoid rear axles and on the ¾-ton models the axle shafts have been strengthened. On these and light delivery trucks, involute splines replace the flat-faced splines on the inner ends of the axle shafts. Gear ratios remain the same on all trucks except the ¾-ton trucks. On these models the ratio is changed from 4.11 to 1 to 4.55 to 1. Optional gear ratios are available only on the heavy duty conventional and cab-over-engine trucks.

Longer life for the universal joints is assured by the adoption of anti-friction bearings of the needle-bearing type. On all trucks which have the two universal joints, this new needle bearing type is used at the rear joint where the shaft angularity is greatest.

In changing the engine angle to conform with the new hypoid axle drive system, the angle was made the same in all trucks except the cab-over-engine models to facilitate the manufacture of floor and toe pans.

The improved transmission, with its involute instead of straight-splined mainshaft and its all-helical gears, is used in the light delivery and ¾-ton trucks. Gearshift levers on all trucks are the conventional type and are revised due to the lower transmission position.

Regular production option equipment is essentially the same as last year. However, there is no canopy top equipment available for the pickup trucks. Also, all dual wheel equipment for single wheel trucks is available under regular options.



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and
YOU'LL PUT DOLLARS
IN YOUR POCKET!**

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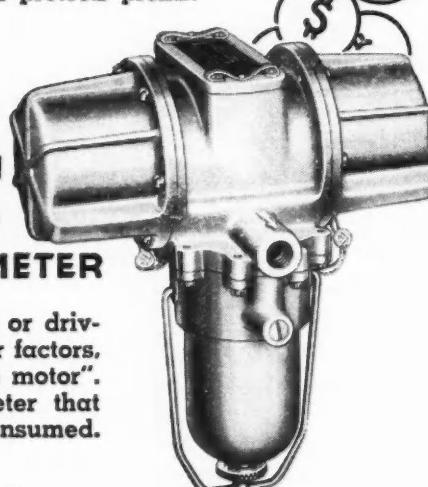
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Available in sets, rolls, blocks and slabs—in all widths and thicknesses—for all makes and models of passenger cars, trucks, tractors, buses, etc. . . . Sells at competitive prices—notwithstanding high qualities.

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Send me complete information on Wagner CoMax Brake Lining and my free copy of the new catalog BU-43.

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4 YEARS OF REGULATION

(CONTINUED FROM PAGE 35)

Carriers in every instance have not been limited to specific commodities. Many have been granted the right to transport "commodities generally." But generally speaking, there is a deep-seated feeling that the Commission is too restrictive in granting operating authority. Moreover, it is inconsistent. There is no apparent pattern it follows in handing out certificates and permits. At least, so say many truckmen.

Most motor carriers don't like the Commission's insurance rules, particularly Rule VIII. That provision requires insurance companies to be licensed in every state in which they cover a motor carrier's operations. The effect of this rule, they complain, is to place the truck insurance business in the hands of a relatively few large companies. The result, they fear, will be to make insurance harder to get. Rates probably will rise.

The Commission considered the Rule VIII question at length after the organized industry had petitioned for an amendment to permit an insurance company authorized to do business in the home state of a carrier to underwrite the carrier's entire operation. The Commission refused to modify the rule. There was widespread disappointment in the industry.

Rule VIII was not written into the Act. Congress merely directed the Commission to set up adequate insurance regulations for the protection of the public. Many carriers believe the Commission could have found some way of providing public protection without imposing additional burdens on an already overburdened industry.

When Congress gave the Commission power to investigate and report on the need for Federal regulation of sizes and weights of motor vehicles, truckmen had hoped the Commission would act quickly and wind up by recommending uniform Federal limitations, giving them relief from the hodge-podge of State restrictions. Recently the Commission started such investigation, but truckmen are not optimistic that Federal legislation will be enacted very soon.

Another complaint of many motor carriers is failure of the Act to result

in smooth coordination of highway and railroad service. This was one of the objectives of the Act, according to its "declaration of policy," but Congress overlooked the fact that the railroads might not want to play ball.

Carrying out a resolution adopted by the Association of American Railroads, the rail carriers absolutely have refused to coordinate with independent truckmen. Instead, they demand the right to begin new truck operations of their own. Congress did not give the Commission power to compel the rails to make joint rates and through routes with independent highway operators, so the Commission has to choose between granting the railroads' applications or depriving the public of the benefits of coordinated transportation service.

Obviously, the Commission cannot compromise public interest. The fault lies in the Act itself, and unless it is amended to give the ICC power to compel the rails to coordinate their operations with independent motor carriers, the rails will be free to conduct a wholesale invasion of the highway field.

That is a threat ever-present in the minds of motor carriers. They don't know when the railroads, aided and abetted by the law and the Reconstruction Finance Corporation, may take over the trucking business, bag and baggage.

Truckmen were given some protection from invasion by the railroads by the Commission's so-called Barker decision. The Commission held that a railroad could not buy a trucking company unless it proved the truck operations acquired would improve its train service to public advantage without restraining competition, and would be used only to supplement the train service.

The "Barker doctrine" has given independent truckmen a type of protection they never had prior to regulation. They would think a long time before they willingly would see it wiped out.

But many motor carriers contend the Commission's so-called Scott decision was almost as bad as the Barker decision was good. It ruled that trucking companies performing local pick-up and delivery service for railroads were exempt from the Act. They say the Commission went out of its way to relieve the railroad truckmen of the regulations that indepen-

dent lines have to live up to. Several members of the Commission disagreed with the decision and said the majority view was based on a strained interpretation of the law.

All truckmen are unanimous in saying that regulation has greatly increased the cost of operation. Such things as lawyers' fees, expensive tariffs and lengthy hearings have increased overhead and narrowed the profit margin.

The Commission's order limiting the working hours of drivers has forced many lines to take on new employees. Truckmen want to see men go back to work, but motor carriers under ICC are confronted with the problem of making ends meet in the face of rising costs and fixed rates.

It's the same story in connection with the rest of the Commission's safety regulations. They fill a 100-page booklet. Overhead has gone up trying to comply with them.

Few operators, if any, have a good word to say for the driver's log. The drivers themselves are complaining about the inconvenience of having to record their every action while they are on duty. Not only that, the log is too complicated, it takes too much time of drivers and clerks, and the general complaint is that it is impractical from the standpoint of enforcement.

The safety regulations admittedly have good points. They have been adopted in whole or in part by 36 states, and this gradual trend toward uniformity is something motor carriers have favored for years. In 1938, the first full year the rules were in effect, accidents involving trucks subject to regulation were down 30 per cent.

Thus, it appears that the benefits of regulation—stability, protection, settling of the field, elimination of chiselers—are balanced against the industry's many complaints.

If a vote were taken on whether regulation should be scrapped the "ayes" would come chiefly from small carriers. But there is every indication that the larger carriers would tip the scales. Latest figures of the Commission show there are slightly under 1200 Class I motor carriers of property—those having an annual gross revenue of \$100,000 or more. This group does more than half of the trucking business, based on volume.

(TURN TO PAGE 76, PLEASE)

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**THE QUALITY
SPARK PLUG**

Chevrolet, Diamond-T, Federal, GMC, International and White Trucks; Buick, Cadillac, Chevrolet, La Salle, Nash, Oldsmobile, and Pontiac motor cars; Allis-Chalmers, Cletrac and International Harvester Tractors . . . these are some of the well-known trucks, cars, and tractors which use AC Quality Spark Plugs. Trust your spark plug requirements to the same brand of spark plugs which the leading, big-volume manufacturers select.

COMMERCIAL CAR JOURNAL
NOVEMBER, 1939



WHAT HAPPENED —

(*a general hauler's case history*). Plugs of several different makes, and in several different makes of vehicles, were cracking early at the lower end. Electrodes were wearing fast. A change in heat range, use of AC plugs, and regular cleaning and regapping as recommended by AC, were followed by complete satisfaction.

WHY AC'S SOLVED THE PROBLEM —

AC's uniform success in correcting every spark plug trouble is no miracle. It is simply the result of 30 years of successful experience in building plugs to meet every kind of engine requirement.

Out of this long experience, AC is able to say that you will have *full plug satisfaction* if you will always:

- 1 Standardize on the right *make* of plug
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Best results in cleaning and regapping will be secured if you use the AC Cleaning Machine, AC Cleaning Compound, and the AC round wire gap gauge. AC pioneered cleaners and cleaning materials. Six years' experience, among 70,000 retailers, proves that these AC service tools give best satisfaction and prolong plug life.

"Standardize on AC" for best engine performance.



New, Improved AC PLUG CLEANER

Cleans faster and better. Dual valve control permits cleaning and adjusting in one operation. Available with or without stand.

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(CONTINUED FROM PAGE 74)

Perhaps four years is too short a time to expect a complicated law to function smoothly in a complicated industry. Despite obvious impatience and numerous complaints, the larger operators appear willing to grant the Commission more time to work out effective regulation. They console themselves in the thought that regulation of the railroads did not become fully effective until 20 years after passage of the original Interstate Commerce Act.

Built to take it!

ZENITH Carburetors don't have to be coddled and coaxed when the going gets tough. These babies are rugged and willing. They're made for the toughest kind of tractor service. Give quick starts, sure, smooth, economical power . . . always.

That's why leading truck engineers specify Zenith Carburetors as factory equipment. It will pay you to follow their lead. Specify Zenith Carburetors in the new trucks you buy. And in your older equipment, replace the "gas-hogs" with rugged, long-lived, economical Zeniths.

Every truck engine also needs the protection of a Zenith Fuel Filter— $2\frac{1}{2}$ times as efficient as ordinary screen filtration—takes out all dust, dirt, rust, and water. No cartridge or packing to replace.

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"Built for Permanence" —  — "Calibrated for Performance"

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REO

(CONTINUED FROM PAGE 45)

145 in. for 12-ft. body.

165 in. for 15-ft. body.

The new design provides full support of frame under entire body length. Optional wheelbases are obtainable on special order.

More weight is automatically thrown on the front axle, providing more equal weight distribution. A much shorter turning radius is also

possible as indicated by a radius of 23 ft. 4 in. for the 145-in., 1½-ton truck.

Reo's Gold Crown engine has been further improved and re-engineered for longer life, efficiency and economy. Horsepower and torque per cubic inch have been increased.

Another feature is the complete interchangeability of mechanical units—engines, transmissions and rear drives. Any model can be powered and geared to meet specific operating conditions at regular production prices. There are at least two engine options available for each model, an option of 4 or 5-speed transmissions for each model, and rear drive options of spiral bevel gear, 2-speed, and double reduction.

Special consideration was given to driver comfort in designing the all-steel cab. Plenty of leg room, wide, easy in-and-out doors and deep cushions are features. The instrument panel is of all-steel construction with instruments clustered in center. Handy compartments are on each side.

Frames have deeper side rails and wider flanges. For example, Model 19, rated at 1½ tons, has a frame 8⅜ in. deep with a 3-in. flange at top and bottom. Numerous cross-members with gussets, together with channel steel bumper, are fabricated into these massive Reo side rails, insuring greater stability yet flexible enough for all road conditions.

Detailed mechanical specifications on all five Reo 1940 models, together with prices, will be published in the December issue.

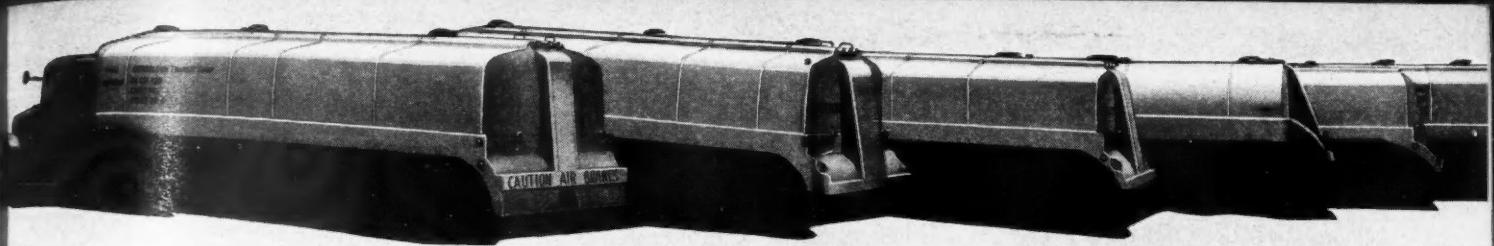
Bantam Expansion

Stockholders of the American Bantam Car Co. have authorized a \$1,000,000 bond issue to cover an expansion program attributed largely to increased orders from abroad where manufacture of war supplies has greatly reduced car production.

Four new domestic distributorships have also been announced by the company. They are: Spurrier's, Inc., Oklahoma City; Lyle D. Walker (Kansas & Western Missouri); Hadsall Motors, Denver, and Omaha Bantam Sales, Omaha, Neb.

Perfect Circle Optimism

For the second time in as many months, Perfect Circle Co. looked over its monthly sales reports and found a new record for that month had been established. This time it was August. A record to be proud of indeed.



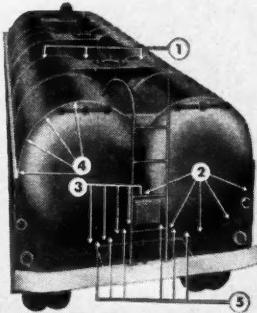
The PETROLEUM TRANSIT CORPORATION, DETROIT, MICHIGAN, hauling in 10 states, now operates a fleet of 70 BUTLER GASOLINE TRANSPORTS, a few of which are shown above.

IN GASOLINE HAULING OPERATE FLEETS OF Butler Twin-Tank *Safety* Transports

Whim or fancy might cause a highway transport operator now and then to try a transport unit which, compared to the conventional, is revolutionary in design. But, it takes hard, down-to-earth, money-saving advantages to cause big operators from coast to coast to switch whole fleets, as have these and other leaders in gasoline hauling. Safer, yet lower cost transportation, is the reason for the big swing to BUTLER TWIN-TANK Safety TRANSPORTS. Engineered into BUTLER TWIN-TANK design are five new safety factors (illustrated at the right) that give you greater safety through greater strength and at the same time weight saving to increase payload.

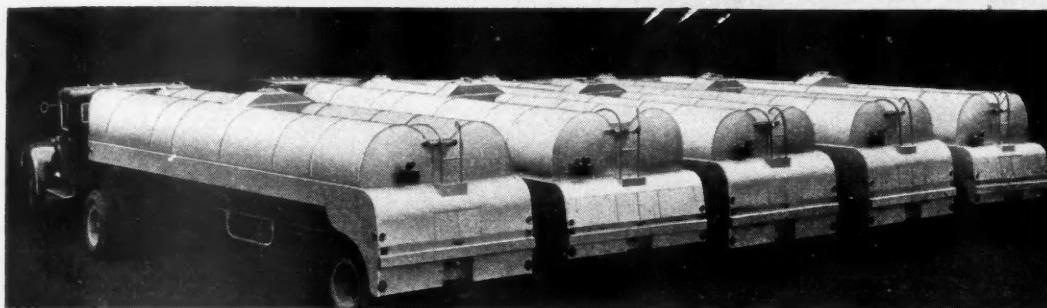
Like every great advancement, Butler TWIN-TANK design is simplicity itself. Each "twin" is a stronger shape and stands the strong way. Prove the extra strength inherent in Butler TWIN-TANKS to your own satisfaction. Crush an egg placed flatwise between the palms of your hands. Then see how much harder it is to crush an egg placed endwise between palms.

Before you buy any liquid transport SEE "THE TWINS" AT THE NATIONAL MOTOR TRUCK SHOW or call upon Butler engineers to show you in detail how Butler TWIN-TANK Safety TRANSPORTS protect you while giving longer, lower-cost transportation.

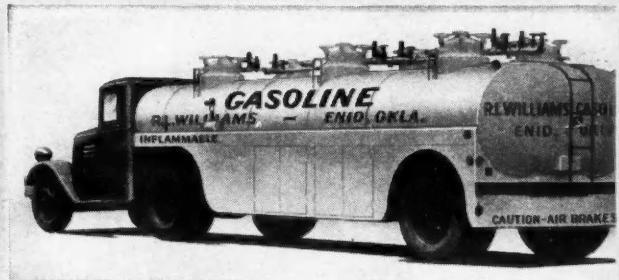


COMPARED TO A CONVENTIONAL OVAL TANK OF SAME HEIGHT AND WIDTH

1. Butler Twin-Tank strength as a beam gives a 20 to 1 factor of safety.
2. Butler Twin-Tank hopper or liquid carrying strength is $3\frac{1}{4}$ times greater.
3. Butler Twin-Tank shear strength is twice greater.
4. The short radii of Butler Twin-Tank shape virtually eliminates vibration and reduces possibility of cracking.
5. Butler Twin-Tank bottom strength or strength over the integral frame (most vital section of any tank) is 8 times greater.



"HARGY" HARGEROAD, HASTINGS, NEBRASKA, bought the first BUTLER GASOLINE TRANSPORT and with it established a mileage record running into millions. Across the plains of Oklahoma, Kansas and Nebraska, a large fleet of Hargeroad BUTLER TWIN-TANK Safety TRANSPORTS operate night and day.



This BUTLER TWIN-TANK hauls casing-head gasoline under 35 lbs. pressure. It is in this hazardous service that TWIN-TANK design was developed. R. L. WILLIAMS of ENID, OKLAHOMA, has operated a fleet of these liquid-gas "TWINS" for many years.

See "The TWINS" At The
NATIONAL TRUCK SHOW
Navy Pier, CHICAGO, ILL.
Nov. 8th To 16th

BUTLER
Twin-Tank
SAFETY
TRANSPORTS



WRITE US NOW! FIND OUT WHY IT WILL PAY
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"TWINS"
NEXT TIME!



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Send complete information on Butler Twin-Tank Sa
Transport of gallons capacity.
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City State

ECONOMY & EFFICIENCY

(CONTINUED FROM PAGE 63)

keeping vehicles tuned to concert pitch and still the rate of fuel consumption may not drop. This may be due to careless filling in which a considerable portion of fuel is spilled as a result of overflow; it may be due to some one syphoning gasoline out of the truck tanks when the driver is making deliveries or it may be due to drivers providing their own cars

with company gasoline. Now COMMERCIAL CAR JOURNAL is not sponsoring a reform movement but it is, above all other things, practical. What is the use of ignoring the fact that many fleets buy gasoline and the records show that the trucks of the fleet consume the gasoline when, as a matter of fact, the gasoline never gets into the carburetors of the fleet.

One New York fleet reduced its gasoline consumption about 40 per cent by installing flow meters, which measure the amount of gasoline that

the truck actually uses. This saving was immediate upon announcement that the trucks had been equipped with registering devices. A Pennsylvania contractor makes no secret of the fact that his drivers or others got away with 2500 gal. of gasoline on one job away from home control. The fleet was not equipped with flow meters and so no detailed account of the gasoline was available to stop the loss even when it was known that there was a loss. These two examples are spectacular. There are countless others not quite so amazing. Drivers who are required to buy fuel enroute are as often as not, complimented to the extent of cigarettes or lunch for signing for more gasoline than is put in the truck. One gasoline station proprietor asks every driver how much gasoline he wants put on the bill whether he knows driver or not. He has a very popular station as a result of this type of sales promotion.

Entering the gasoline economy picture from the standpoint of preventing road failures is the electric fuel pump. Vapor lock in warm weather and failure of a single fuel pump in any weather can cause an expensive delay. Vapor lock can be overcome by an electric pump mounted in a pusher position and failure of the mechanical pump is not a very serious item if the vehicle is also equipped with an electric pump which can be used as a standby pump.

Lubricating oil does not represent as much expense as gasoline but the saving that can be effected in oil is proportionately higher. In the first place we must assume that good oil is used. If good oil is kept clean it can safely be used much longer than if it is not. Just how much longer depends upon the service and conditions of operation. Adequate filters properly mounted and serviced will keep oil clean. That much does not seem to be open to debate. It naturally follows that there will be less wear in an engine, operating on clean oil and the oil will last longer. It then follows that if the oil expense and maintenance costs can be reduced more than the cost of filters and servicing them, the application of filters represents a net saving.

COMMERCIAL CAR JOURNAL has never come across a case where the installation of filters did not represent a saving provided the installation was done carefully and the ser-

(TURN TO PAGE 86, PLEASE)



**These Gears
Are Going to
Help Haul
Bigger Loads
Faster... At
Smaller Cost**

This is a matched set of FULLER Transmission gears being lapped together, by special FULLER methods, under the critical eyes of a specialist with a 25-year-old tradition of quality.

These gears, when completed, will help to make a long-lived, staunchly dependable transmission that will do an outstanding job in heavy hauling, over all kinds of roads.

Only FULLER methods, machines, and MEN can produce gears like these.

FULLER offers you quiet operating, easy shifting, and a series of models to meet a wide variety of operating conditions.

FULLER MANUFACTURING CO.
Kalamazoo . Michigan

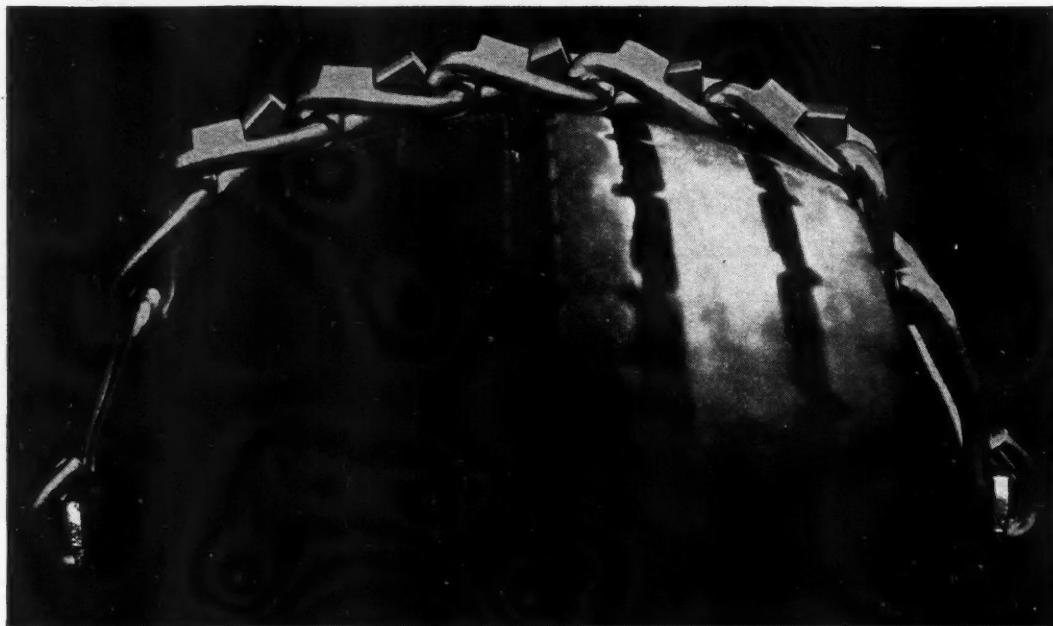
**HEAVY DUTY
TRANSMISSIONS**

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COMMERCIAL CAR JOURNAL
NOVEMBER, 1939

CAMPBELL

Lug-Reinforced TIRE CHAINS



Tops
for Mileage and Safety

IF YOU have ever groaned over tire chain bills . . . or wished you could find a chain with a greater safety factor . . . then here is a message you can't afford to overlook.

Campbell Lug-Reinforced Tire Chains are acclaimed by leading fleets throughout the country as the greatest advance in tire chains in a decade. These operators base their enthusiasm strictly on their own costs and safety experience. They find that these chains give better protection and cost less because they run longer.

No Other Tire Chains offer ALL of these Features:



ONE-PIECE CONSTRUCTION: Made of the finest case-hardened molybdenum steel . . . completely in ONE PIECE. There are no welded bars to break off. You not only get longer life, but full protection for the full life of the chain.

POSITIVE ALL-WAY TRACTION: The exclusive patented saw-tooth design guarantees a new high in traction under the severest circumstances of ice, snow, or other slippery conditions. Look at the illustration and see why no other chain offers such positive traction.

LONG LIFE: Long life is far from an empty phrase with Campbell Lug-Reinforced Tire Chains. The use of the finest case-hardened steel, positive traction to prevent undue slippage, and one-piece construction combine to assure mileage that formerly couldn't be hoped for.

LOW PRICE: Special discounts to fleet operators represent a definite saving in original investment over any other quality chains. The additional operating savings of long life and dependability during winter driving are bonuses that no fleet operator can afford to ignore.

Your own experience with these tire chains would unquestionably win the same comment from you, for the superiority of Campbell Lug-Reinforced Tire Chains is a combination of exclusive design and construction factors offered by no other tire chains. Make up your mind now to learn all about them. It will be the first step toward greater chain mileage and higher safety for your fleet.

CALL YOUR JOBBER NOW. IF HE CAN'T SUPPLY YOU . . . WRITE DIRECT

INTERNATIONAL CHAIN & MFG. CO.

YORK

PENNA.

(CONTINUED FROM PAGE 84)
vicing done thoughtfully.

Aiding the filter in keeping the engine clean internally is the air cleaner. In some of our western states, operators would just as soon think of operating trucks without air cleaners as they would of going to church without a necktie. Operating conditions in some cases are more severe than others, but in all cases there is work for the air cleaner to do.

No manufacturer makes a truck capable of operating in any kind of service in temperatures ranging from well below zero to well above 90 and still maintain an efficient engine operating temperature at all times. The best average temperature at which to operate a truck engine is pretty well established. Many operators know it but not many of them do anything about it. Radiator shutters, thermostatically controlled will maintain engine temperature and thus prevent

sludge, excessive gasoline consumption and excessive wear.

A look at the gasoline records will tell the fleet operator when winter comes even though the periods may not be labelled by seasonal notes. The rate of gasoline consumption climbs for one reason—cold weather. It is possible to have June in January under the hood with the help of a radiator shutter.

By the time a fleet gets a reliable anti-freeze of uniform quality with a rust inhibitor in it, this protection from freezing represents a sizable chunk of money. Due to temperature fluctuations the anti-freeze has to be replenished several times during the winter. Experience with surge tanks indicates that in all types of service this addition to the cooling system will make replenishment unnecessary for perhaps a whole season. The life of the surge tank is almost indefinite.

Expander type piston rings have not enjoyed the success in fleet operated trucks that experience with them in passenger car maintenance would seem to merit. For some reason or other fleet maintenance men seem to have passed up this possible source of economy without investigation. Doubtless expander type piston rings will receive more attention as they begin to make their appearance in vehicles as standard equipment and as they are recommended for use in maintenance by truck manufacturers, a policy that has already been started by some manufacturers.

No attempt has been made to even mention all of the accessories which contribute to fleet efficiency and economy. This has just been an outline in which a few of the outstanding ones were mentioned. It will have served its purpose if it reminds fleet operators that there are many accessories that should be investigated if fleets are to operate as well as possible for as low a cost as possible.



. . . A LIFT will do it Easier, Quicker

Tire chains can be installed in a blizzard . . . if your driver will put up with the delay and finger-freezing job. In the warmth and comfort of your shop, with wheels free on a Joyce Lift, it is an easy task that guarantees a speedy trip and safe return.

This is only one of many things a Joyce Lift will do to keep the fleet running safely and without expensive breakdowns and delays.

Joyce Two-Post Bus and Truck Lifts are built in the proper dimensions for any type Truck, Bus, Trolley or Motor Coach. In them are all the superior design fea-

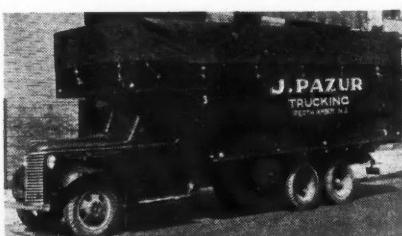
tures which have sold many thousand Joyce Auto Lifts to the big oil companies. You, too, will find them ideal for all underbody work, dropping engines, transmissions, drive shafts, and for tire inspections, wheel changes, brake adjustments, installing tire chains, general lubrication, etc.

Joyce Lifts don't cost . . . they pay. Send coupon for Bulletin No. 158 giving specifications of the world's most complete line of Bus and Truck Lifts.

THE JOYCE-CRIDLAND CO.
Dayton, Ohio



I am interested:
 Truck Lift Name
 Coach Lift Street
 City



A Truckstell Model TRC-2X400 third-axle installation gives this Chevrolet-powered vehicle a gross rating of 25,000 lb. Wheelbase is 179 in.

PUBLIC

(CONTINUED FROM PAGE 25)

states which maintained prohibitive limits on truck weights. Four of these, South Carolina, Alabama, Tennessee and Kentucky, formed a virtual blockade to interstate truck operations between the agricultural south and the industrial north and northeast. Extending from the Mississippi River to the Atlantic Ocean, these four states formed a "Siegfried Line" that worked to the detriment of truckmen, shippers and consumers throughout the eastern half of the United States. The line began to crumble in April, 1938, when South Carolina, after an open and bitter fight by the railroads, increased its weight limit from 20,000 to 40,000 pounds. In March, 1939, the Tennessee Legislature approved a weight of 24,000 pounds to replace its old limit of 18,000 pounds, and Alabama recently increased its limit from 20,000 pounds to 30,000 pounds. Strenuous efforts now are underway to increase Kentucky's limit of 18,000 pounds.

The trucking industry's fight against the low weight limits in South Carolina, Tennessee and Alabama, and its ultimate success clearly illustrate that public education is the industry's best defense. In each of these states, truckmen merely led the fight. They fought these low weight limits alone for years without success. When victory came it resulted from the demands of an indignant public—shippers, farmers and consumers—who finally became aware that they were the real sufferers.

The fifth low weight state is Texas. This is additional proof that the anti-highway campaign follows well laid plans. Texas, with its pan-handle area extending deep into the interior of the country, forms an effective barrier between southwestern and southeastern states.

This year, the campaign was centered on Nevada. Every conceivable type of legislation was proposed that might make it difficult or impossible to operate trucks in or through the state. Inasmuch as Nevada has fewer trucks than any other state, it might be difficult to understand why it was the principal target of this year's attack. For an explanation, one need only glance at the map. Located in the center of the western

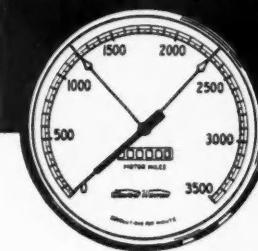
states, Nevada represents a potential hazard to truck operations in the entire area. It is a "bridge" state in a vast area of the West. Fortunately, the campaign was unsuccessful, but western truckmen had better remain on guard.

Additional evidence that this attack is well-planned and deliberate is found in the types of legislation advocated from time to time. It was obvious this year, for example, that two particular types of legislation were selected. Legislation seeking to

bar trucks from the highways on Sundays and holidays was introduced in 16 states, and bills proposing to limit the quantities of gasoline or petroleum to be carried in a tank truck were introduced in 19 states. The lion's share of the credit for defeating these measures must go to an enlightened public.

Another threat to the industry is the tendency of some administrative and judiciary bodies to discriminate against trucks in favor of the railroads. In some states the applica-

NOW YOU CAN CUT FUEL, OIL, REPAIR EXPENSE AS MUCH AS 25%



BY OPERATING TRUCKS IN
THE ECONOMY RANGE

with the new

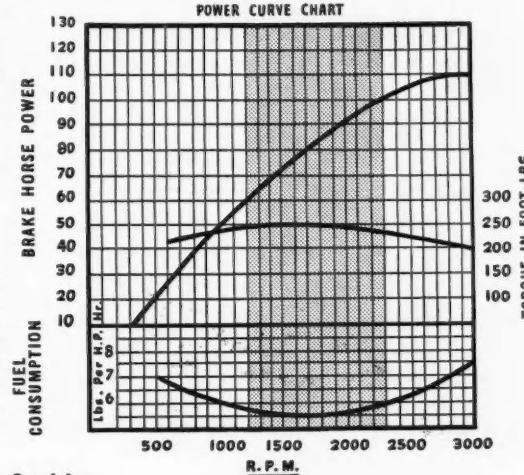
STEWART-WARNER MOTOR MILE TACHOMETER

EVERY truck has an ECONOMY RANGE—a certain range of r.p.m. within which it operates at maximum torque, horsepower, and road-speed efficiency consistent with fuel economy. Above that range, overspeeding occurs—a short cut to early motor death. All truck manufacturers warn against overspeeding. Below that range, "lugging" results.

NOW, with the amazing new Stewart-Warner Motor Mile Tachometer, it is possible for the driver to know the ECONOMY RANGE of his truck—and to keep his engine speed always within that range! Two red pointers are permanently set at the upper and lower limits of this range. The driver merely needs to keep his tachometer pointer between those two red pointers—and you save up to 25% on your fuel and oil expense!

Records Motor Miles for Accurate Servicing

More than that, this utterly new kind of tachometer not only shows engine r.p.m., but records them in terms of "motor miles"—the only safe basis for engine service. Thus the added "motor miles" which your motors pile up traveling in low gear—or while your engines idle during a long stop—are truly recorded. Servicing your trucks on this basis can save as much as 25% of your repair bills! Mail the coupon for complete details.



Graph Shows Economy Range

In determining the economy range of a truck, brake horsepower is recorded at all operating speeds. So also is the torque. Fuel consumption is likewise carefully computed. In this particular case, the range of engine speed between 1200 and 2300 r.p.m. proves to develop the most power with the lowest fuel consumption, and is, therefore, the ECONOMY RANGE.

STEWART WARNER

MOTOR MILE TACHOMETER

STEWART-WARNER CORPORATION
1876 Diversey Parkway • Chicago, Ill.

STEWART-WARNER CORPORATION Dept. K
1876 Diversey Parkway, Chicago, Illinois

Please give me all the facts about cutting truck operating costs with the new Stewart-Warner Motor Mile Tachometer.

I operate trucks.

Name.....

Address.....

City..... State.....

Firm Name.....

(CONTINUED FROM PAGE 91)

tions of truckmen for authority to operate are being denied on the ground that they would compete with rail carriers. The Nevada Public Service Commission recently revoked a trucking company's operating certificate when competing railroads complained that they were losing some of their business. This same policy has been used in other states.

If some one attempted to end manufacture of mechanical refrigerators on the theory that they compete with

the ice man, the protests of the public would be overwhelming. The people would not even consider such a backward step in the field of refrigeration. Nor will they tolerate application of a similar theory in the field of transportation when they are made to realize the probable results.

In Illinois, the state highway authorities convinced a U. S. District Court that highway users were not paying their fair share of the cost of building and maintaining the roads. A subsequent impartial study

showed that the state's highway receipts actually were greater than its highway expenditures. The study of the state highway authorities was based on the public utility theory, that is, that the highways should yield the state a profit. If this theory were accepted generally the results would be disastrous—license fees would be jacked so high that truck operation would be prohibitive.

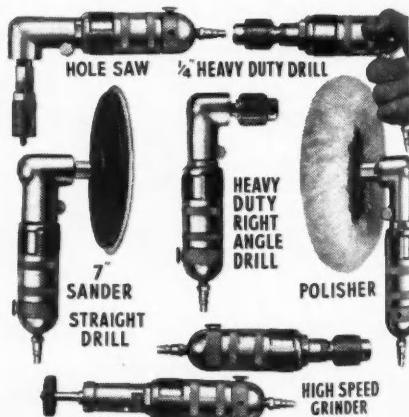
A government that operated public schools, fire departments, police and sanitary services for profit would not be tolerated. And the public—particularly the motoring public—would not stand for application of the public utility theory to roads if it knew what was going on.

It is the job of the trucking industry to see that the public DOES know what is going on. We have made marked progress in the past, but we have a hard, uphill fight before us.

Manufacturers and suppliers fully realize that danger to the trucking industry means danger to themselves. They may be expected to do their part. Primarily, however, this is the trucking industry's fight, and it's up to motor truck operators to get in the front line. From our vantage point, we can see no immediate let-up in the campaign to junk the highways and drive traffic and travel back onto the rails.

Aro Pneumatic Tool Kit

Small size, big power, low maintenance and great dependability are claimed for a new set of pneumatic tools offered in kit form by Aro Equipment Corp., Bryan, Ohio. Assembled in its own metallic box,



the kit includes a small, powerful air motor and all attachments necessary to form the tools illustrated. Speeds are variable between 500 and 12,000 r.p.m. depending upon tool used. Entire kit weighs but 14½ lb. Full details from the makers.

Ed, we're sure cashing in on the trouble-free performance of our HEIL EQUIPMENT

HEIL HOISTS, BODIES AND TANKS PAY OUT IN LONG-TIME SERVICE

9 cu. yd. Heil dump body and powerful Heil straddle-mount hydraulic hoist.

Heil Trailered Tank Train. Total capacity 7500 gallons. Send for new Heil tank catalog.

You can depend on Heil to provide hydraulic dump units and transportation tanks that help you operate at a profit . . . Years of experience and research and famous Heil Quality construction result in units that STAND UP under tough working schedules, at MINIMUM MAINTENANCE EXPENSE . . . Follow the example of successful fleet operators everywhere — get Heil recommendations before you buy. Write today for free Heil equipment manual covering the popular Heil line that helps you make more money.

MILWAUKEE,
WISCONSIN THE HEIL CO. HILLSIDE,
NEW JERSEY

Hoists — Bodies — Tanks
Road Scrapers — Snow Plows

Bottle Washers — Dehydrators
Heating Equipment — Water Systems

THE DEAN OF ALL TRUCK TIRES



GENERAL regards the new C. D. as the finest truck tire it has ever produced . . .

It is the first tire capable of carrying a thicker and more durable tread into continuous, fast, long haul service . . .

It introduces entirely new principles into tire engineering . . .

It will give you more miles than you ever dreamed possible . . .

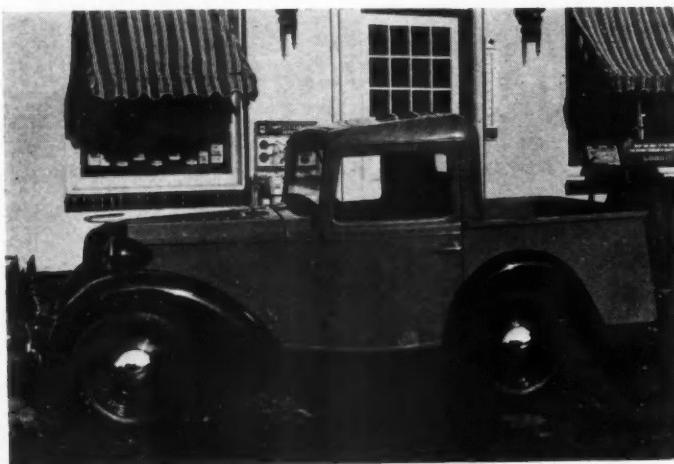
It will give you from 50% to 100% profit on the difference you pay . . .

Let your General Tire dealer fit a set of C. D.'s to the truck of your selection. Then you check the results for yourself!

THE GENERAL TIRE & RUBBER COMPANY • AKRON, OHIO

The New **GENERAL C.D.**
AVAILABLE FOR TRUCKS FROM $\frac{1}{2}$ TON TO 10 TONS CAPACITY

BANTAM STREAMLINED PICK-UP



ON the new Bantam pick-up model the box has been streamlined, replacing the square box on conventional trucks. Curves on the box now conform with the modern hood and cab lines.

This model is powered by a four-cylinder L head engine having a piston displacement of 50 cu. in. It has a brake horsepower of 22, at 3800 r.p.m. It has an aluminum alloy crankcase and aluminum fan brackets.

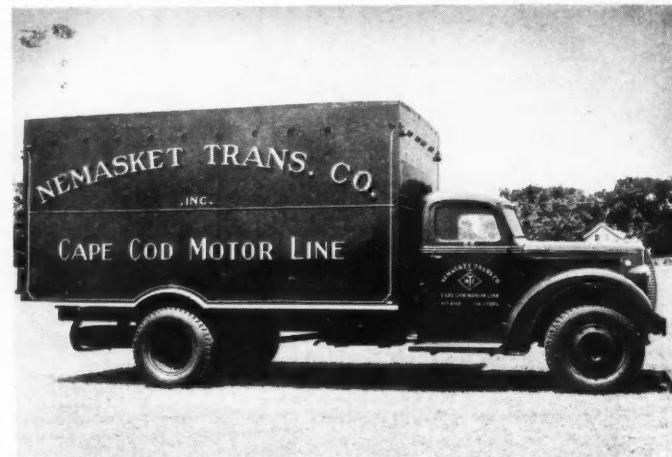
The clutch is a 8½ in. diameter Rockford single-plate and the transmission has a silent second speed. The brakes are mechanical, conduit controlled. Shock absorbers are Monroe hydraulic. Ground clearance is 8 in.; wheelbase 75 in. and tread 40 in. front and 42 in. rear. Weight is 1200 lb. with average body and full equipment. Tires are 5.00/15 or 4.00/15.

MAXIM HEAVY-DUTY FORD CONVERSION

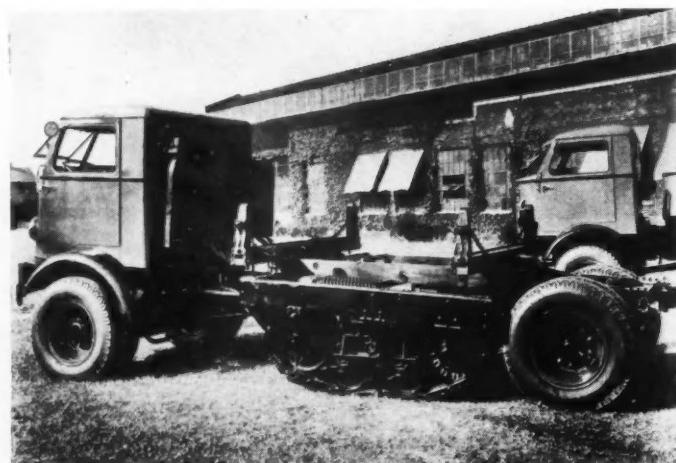
USING a standard 95 hp. Ford engine as the power-plant and Timken front and rear axles, Budd 10-stud wheels, Ross twin-lever steering gear, Lockheed hydraulic brakes, a Parish alloy steel frame, an auxiliary transmission and special spring, the Maxim Motor Co., Middleboro, Mass., has produced a truck of 22,000 gross vehicle weight.

A standard Ford cab is used as well as the Ford fuel system, ignition system, cooling system, clutch and battery. Lights, fenders, instrument panel and fuel tank are also by Ford. 8.25/20 tires are standard.

Dimension are: wheelbases F35A-157 ¾ in., F35B-175 ¾ in., and F35C-193 ¾ in. giving overall lengths respectively of 257 ¼ in., 275 ¼ in., and 293 ¼ in. Cab to axles measurements are 84,102 and 120 in. for recommended body lengths of 12 ft., 14 ft., and 16 ft.



LINN CONVERTIBLE ROAD TRACTOR

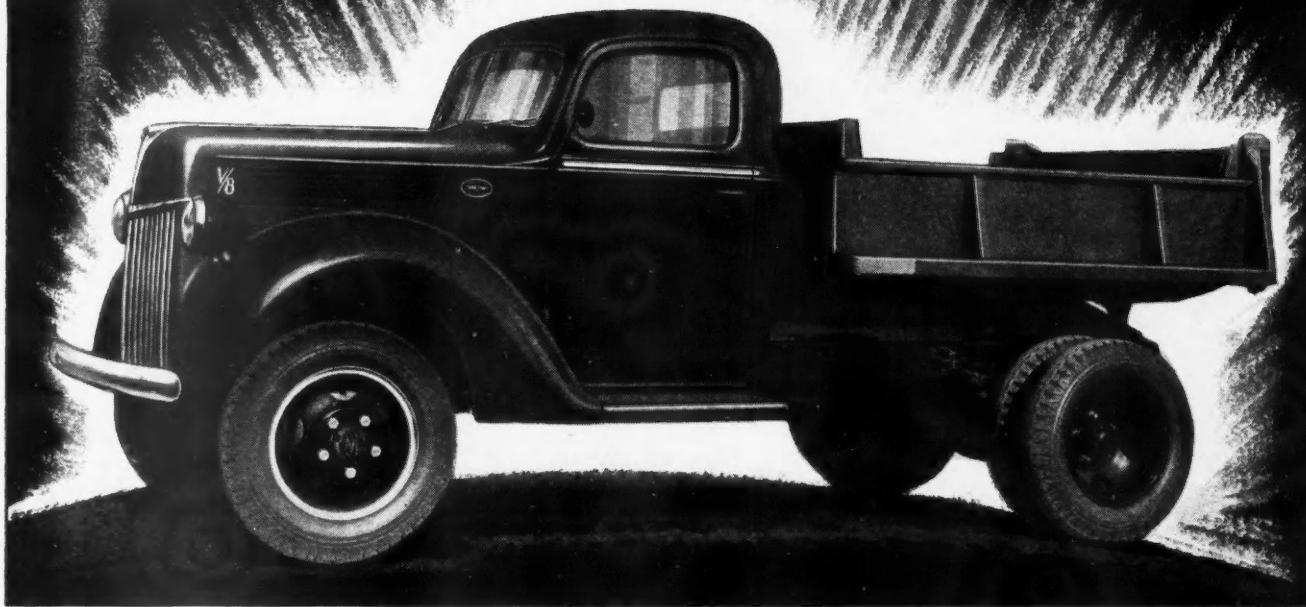


SHIFT a lever and change instantly from wheel to track operation. Shift back and roll on rubber like any conventional wheel type truck. This is a feature of the new unit made by the Linn Mfg. Corp., Morris, N. Y. Designed primarily to eliminate the need for auxiliary equipment or re-handling the load of heavy duty hauling in various types of service, the model C-5 combines the advantages of track and wheel operation by methods free of complication and without requiring the operator to take time out to make the conversion. This unit is especially adaptable to pit operation using the track coming out of the pit and wheels on reaching the road.

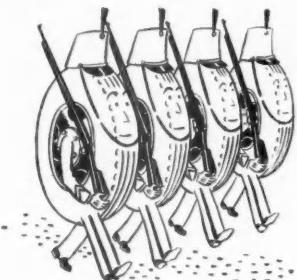
The C-5 is powered by a Hercules 6-cylinder engine YXC having a bore of 4½ in. and a stroke of 4¾ in. If diesel power is desired, the Hercules DRXB engine, 4½ in. by 5¼ in. is supplied.

MARMON-HERRINGTON

All-Wheel-Drive FORDS for 1940



EVERY WHEEL *Alive* **WITH POWER**



- Like good soldiers, all the wheels on a Marmon-Herrington All-Wheel-Drive Ford push forward in the battle for oil and timber; in the drive for faster, more economical road building and maintenance; in the

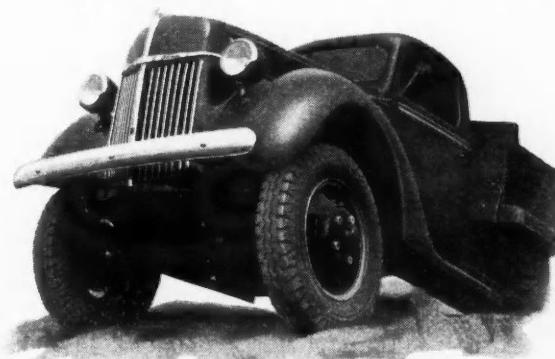
struggle to keep vital highways free from snow and ice.

in use all over the world doing the hardest kind of work ever asked of an automotive vehicle.

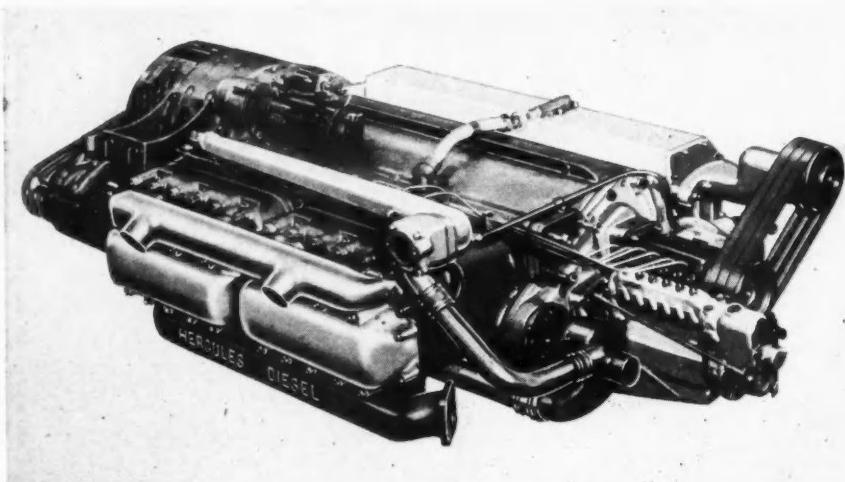
1940 Marmon-Herrington All-Wheel-Drive Fords and heavy-duty trucks are ready. Even better and more dependable than before. Available with any standard or special body equipment you may need. Write for new catalog, just off the press.

MARMON-HERRINGTON, INC.

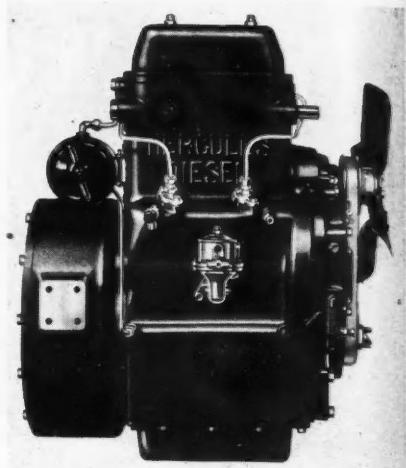
Cable Address: MARTON • Indianapolis, Indiana, U. S. A.



MARMON-HERRINGTON All-Wheel-Drive FOR 1940



New DFZ series horizontal engine showing fuel pump and compressor mounted on front end to keep down height. These may be located on top if space permits



Fuel pump and governor are built into cylinder block on 2-cylinder engine

A NEW series of horizontal diesel engines is announced by the Hercules Motors Corp. The engines come in three sizes: the DFXB which has a bore of 5 in. and a stroke of 6 in.; the DFXC which has a bore of 5 $\frac{1}{4}$ in. and a 6-in. stroke, and the DFXD with a 5 $\frac{1}{2}$ -in. bore and a 6-in. stroke. The piston displacements of the three engines are, respectively, 707, 779 and 855 cu. in.

Model DFXB develops 177 hp. at 1800 r.p.m.; model DFXC, 191 at 1800 r.p.m., and model DFXD, 193 hp. at 1600 r.p.m. Torque curves for all models peak at approximately 1400 r.p.m., developing 530, 585 and 645 lb. ft. respectively.

The fuel pump and compressor may be mounted either at the front of the engine or on top of it. The crankcase is of cast iron integral with the block. Dry cylinder sleeves of a special alloy are used. Lubrication is forced by a gear pump to all connecting rods, main bearings, piston pins and rocker arms. There is a dry sump and a dual scavenging pump. The oil capacity is 9 gal. including built-in tank.

Each engine has a seven-main bearing crankshaft, all main bearings being 4 $\frac{1}{2}$ in. in diameter. Front bearing is 2 $\frac{3}{8}$ in. long; center bearing, 3 $\frac{5}{8}$ in., and rear bearing 3 in. All others are 2 in. long. Con rods are 12 in. center to center, and big end bearing is 3 5/16 in. x 2 1/2 in.

Pistons are of special heat-treated aluminum alloy, equipped with four compression rings and two oil rings.

HERCULES PANCAKES DIESEL

New heavy-duty horizontal series designed for under-floor mounting. There is also a new 2-cylinder diesel

Each of the two removable cylinder heads covers three cylinders. Valves and rocker arm assemblies are carried in the heads. Exhaust valves are of Silchrome, intake valves of 3140 SAE steel.

Engines are arranged for three-point suspension and can be equipped with flywheels for any standard-make clutch. Twenty-four-volt starters, belt-driven generators and oil bath air cleaners are provided. There is also a provision for air compressor or vacuum pump.

Either fixed or manually-controlled injection timing can be supplied, depending on requirements.

Hercules is also introducing a new series of two-cylinder diesel engines

having the same bore and stroke as the DOO and DJX series. Most of the vital parts of these engines are the same as the corresponding parts of the four-cylinder DOO engines and the six-cylinder DJX engines.

The fuel pump and governor are incorporated into the design of the cylinder block itself. The easily replaceable fuel plungers are driven by the engine camshaft. An entirely enclosed but easily accessible governor is mounted on the camshaft gear. The flyball type governor is spring-loaded and an outside control lever enables it to change the tension of the governor spring, thereby controlling the engine speed within a wide range.





Schreiber Trucking Company
UNION FREIGHT TRANSPORTATION
1011 WASHINGTON BOULEVARD
PITTSBURGH, PA.
October 9, 1938

Raybestos
Division
Raybestos-Manhattan, Inc.
Bridgeport, Conn.

You will no doubt be interested to hear of our ex-
perience with Raybestos Brake Lining.

Our Fleet consists of forty trucks, including White,
International, G.M.C., Fords and Hedges, both Tractors and
Trailers. Much of the country over which we operate is mountainous.

After testing many other brake linings, greater satisfaction with Raybestos in terms of safety and low mileage cost led us to adopt it exclusively for replacement on all our vehicles.

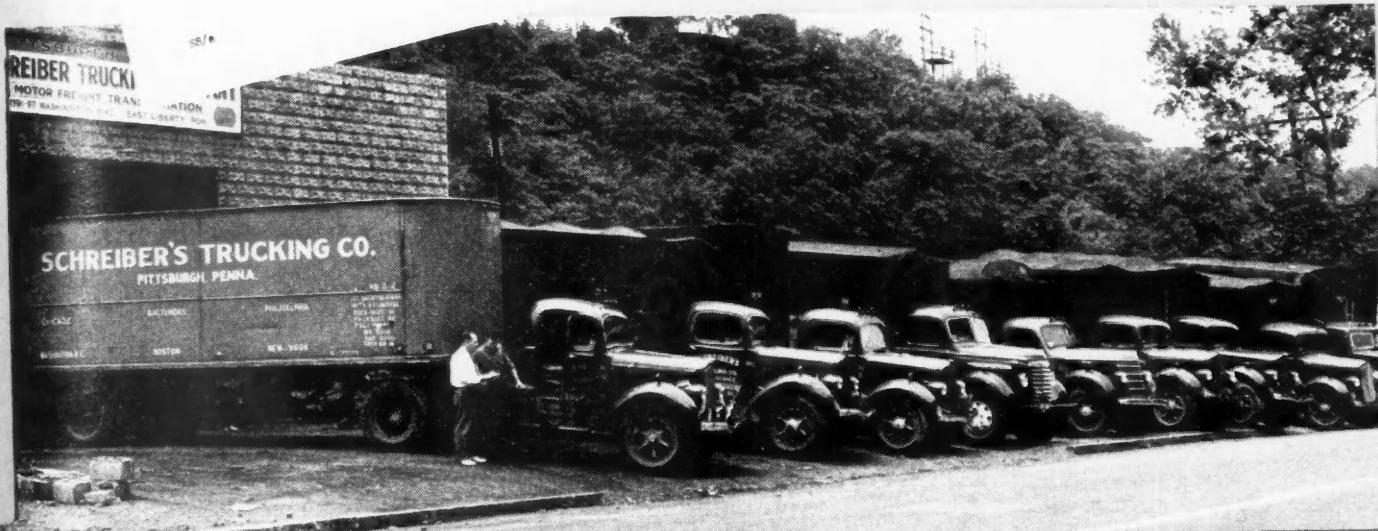
By following your heavy-duty recommendations, we find
that its longer wear gives us not only economy of cost but
fewer lay-ups for brake service and better maintained schedules.

Very truly yours,

H. Schreiber
President
SCHREIBER TRUCKING COMPANY

Equipped entire Fleet of 40 trucks

WITH
Raybestos



Fleet owner Schreiber standardized on Raybestos only after the practical test of actual performance, in many types of trucks, under varying road conditions, in comparison with other makes of brake lining previously used.

Raybestos gave him greater satisfaction in terms of safety and low mileage cost . . . Equal dependability on all his types of trucks and difficult runs . . . Longer wear, resulting in fewer lay-ups, better maintained schedules.

Raybestos can give you the same operating advantages.

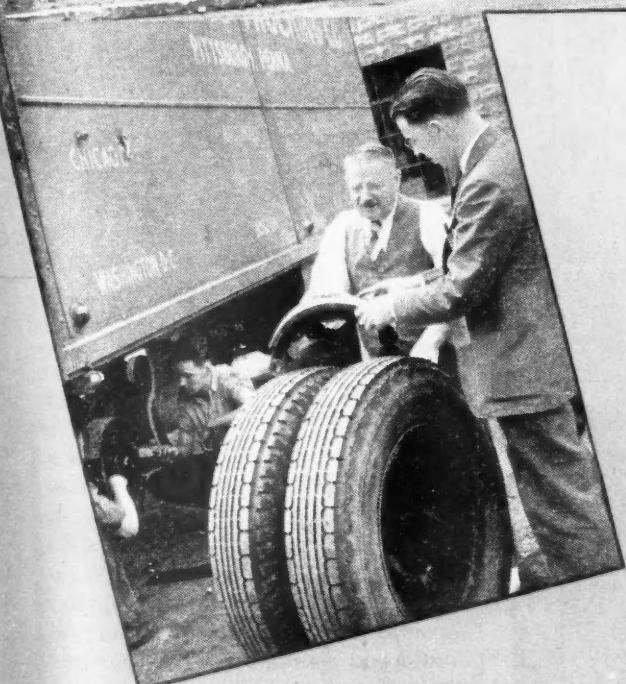
Let a Raybestos field engineer make a free survey of the braking requirements of your fleet.

THE RAYBESTOS DIVISION
OF RAYBESTOS-MANHATTAN, INC.
BRIDGEPORT, CONN.

Raybestos

HEAVY DUTY
PRODUCTS

BRAKE LININGS • CLUTCH FACINGS • FAN BELTS • HOSE



THREATS

(CONTINUED FROM PAGE 23)

and operated their own motor vehicles.

Happily, it may be reported that although in a few instances at certain state capitals highway users retreated a bit in regard to the freedom with which a citizen should own and operate his own transportation, generally, over the nation as a whole, private transportation came through

the 44 legislative battles at as many state capitals well entrenched behind its own breastwork of historical freedom to haul one's own products.

A second item which might be considered a threat to highway transportation is the speed in certain states with which it is desired from some sources, governmental and otherwise, to adopt grandiose highway programs, supposedly for the next 10-year period, but without thoroughly analyzing and interpreting the mass

of data now available as a result of highway surveys. If highway user groups allowed themselves, through enthusiasm, or permitted state agencies, through the natural desire to expand their activities, to rush pell-mell into a riotous building of all kinds of highways simply because we have surveys practically concluded, then the highway user of the future may find himself loaded down; first, with a great maintenance cost; and second, with the necessity to keep on building highways. These surveys have not yet been studied thoroughly enough either by organization representatives or by officials to determine what the highway building program of the future is to be.

Obviously, there will be a highway building program through successive years, but in planning that program organizations of citizens, the members of which must pay the cost of present and future highway building and maintenance, must have as much to say as do the officials who have the technical staff to blue-print the roads. It will make a happy combination for future generations if those who pay the bill and those who are technically informed on highway matters collaborate in using the vast amount of highway data now available in planning for future highway building, maintenance and amortization.

Diversion of highway revenues to other than highway purposes is in retreat, particularly so far as public opinion is concerned. But in certain states, New York State being a startling example, governors or legislators fail to realize that not only the highway user but citizens in the main have condemned diversion. There is consequently enough remnants of this troublesome proposition to justify the inclusion of diversion as a continuing threat to highway transportation.

If highway funds continue to be diverted to the approximate extent of \$200,000,000 a year, which is now in evidence, general property some day will be faced with the threat of increased taxes to provide more funds with which to build and maintain roads; or gasoline taxes and registration fees will be threatened with increases; first, to get more money to build and maintain more roads; and second, to provide more funds for diversion; or less roads will be built, poorer maintenance of highways will

(TURN TO PAGE 102, PLEASE)

SEND COUPON... GET VANETTE FACTS

Transportation Engineers, Inc.
10441 Shoemaker Ave.
Detroit, Mich.

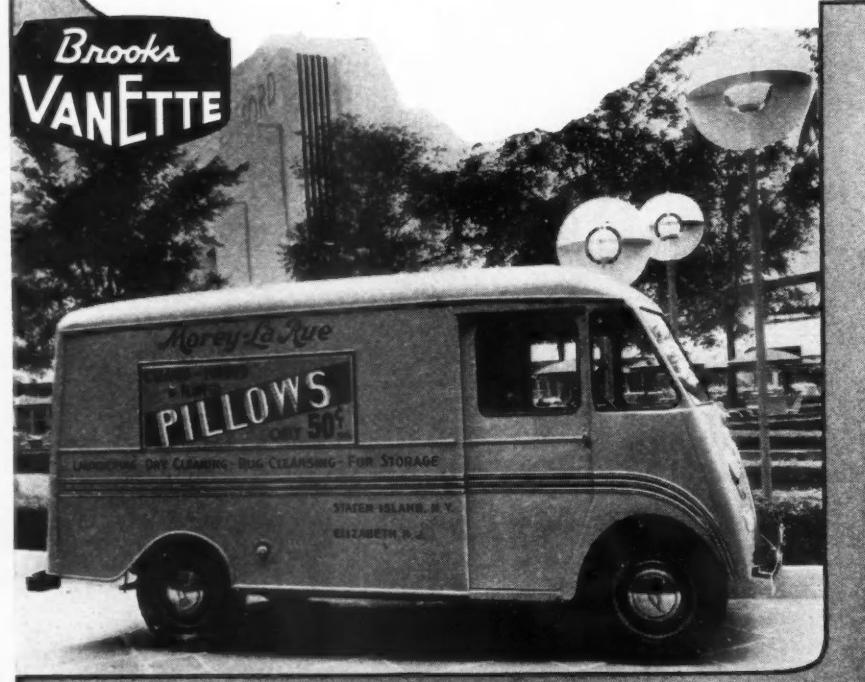
I'd like to know more about VanEtte (pictured below).
Send me pictures, specifications, prices.

Company _____
By _____
Address _____

MONEY SAVED ON YOUR DELIVERY ROUTES

by this VanEtte, exclusively on the Ford truck chassis . . . Bakeries, Laundries, Dry Cleaners, De-

partment Stores, Florists, etc., will get *cost-saving facts and figures* by sending the coupon above.



VanEtte . . . Exclusively on the Ford Truck Chassis



IF YOU'RE LOOKING FOR TRUCK FEATURES . . .

Look at the FORD!

• When the Ford Motor Company speaks of truck features, it doesn't mean "gadgets." Ford features are outstanding qualities incorporated in the Ford Truck to make it tougher, more rugged, more dependable, more economical — or to make the unit easier to handle and operate, increase the driver's comfort, give added protection to the load and contribute to safety.

Shown here are a few important Ford features for 1940. There are many more which you're invited to see at your Ford dealer's. Make a note of them. Compare them with the features offered in other trucks of about the same price — or any price. Arrange for an "on-the-job" test and see what these features mean in performance and economy before you spend another truck dollar.

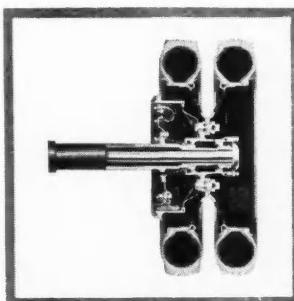
FORD MOTOR COMPANY, BUILDERS OF FORD V-8 AND MERCURY CARS,
FORD TRUCKS, COMMERCIAL CARS, STATION WAGONS AND TRANSIT BUSES

AMONG THE FORD FEATURES FOR 1940

6 wheelbases, 42 body and chassis types. New Sealed-Beam Headlamps. New, larger battery —more powerful generator. Battery Condition Indicator. Worm-and-roller steering. Straddle-mounted driving pinion — ring gear thrust plate. Needle-roller bearing universal joints. Factory-installed two-speed rear axle (at extra cost). Ford Engine and Parts Exchange Plan.



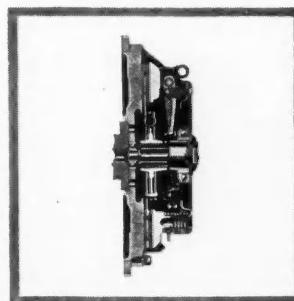
3 V-8 engines. 95, 85 and 60 hp. The only V-type, eight-cylinder truck engines on the market today.



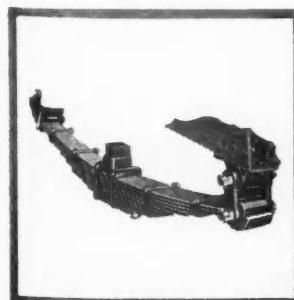
Full-floating rear axle. Relieves the axle shafts of all load stresses. Minimizes possibility of shaft failure.



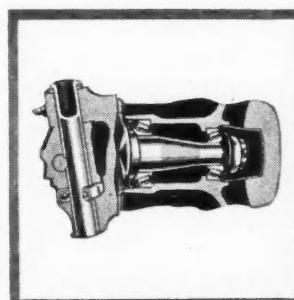
Big hydraulic brakes. Unusually large brake lining area. Dependable, built to Ford standards of safety.



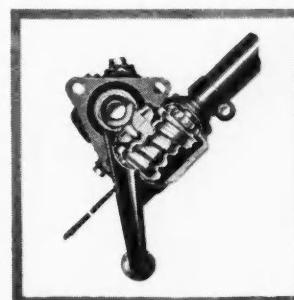
Semi-centrifugal clutch. Provides high power-transmitting capacity combined with low pedal pressure.



New front springs. Provide an additional point of support for frame side-members.



Rugged spindle bolt. Sturdy design for extra reliability. Spindle bolt has 1 1/4-in. diameter.



Worm and roller steering. Minimizes friction and greatly increases the ease of handling.

FORD V-8 TRUCKS

Regulars—One-Tonners—

3/4-Tonners—

Cab-Over-Engine

(CONTINUED FROM PAGE 100)
be visible, and amortization of highway costs will be delayed.

The struggles over sizes and weights of motor vehicles in a number of state legislatures last winter and spring cataloged this controversial question still as being a threat to highway transportation. The solution of the problems connected with sizes and weights of motor vehicles seems to reside more in Federal than in state actions. The states may not be expected, within the reasonably

near future, to adopt uniformity of sizes and weights and to put into practice complete reciprocity thereupon, unless and until the Federal Government leads the way, at least so far as motor vehicles are concerned, in interstate commerce, on those highways in which that government has a proprietary interest. For years recommendations as to uniformity in sizes and weights have been promulgated by the National Association of State Highway Officials. Although all highway user groups do not accept

the specifications in these recommendations in their entirety, there is a trend definitely to use these specifications as the guide in formulating uniformity in sizes and weights.

Since the Interstate Commerce Commission has seemingly more authority than any other Federal agency in this matter, it is reasonable to expect that the Federal Government in the not distant future will lead out on the question of uniformity in sizes and weights for motor vehicles. That being done, the questions now troubling states, relative to reciprocity, will not immediately but quickly disappear in the enactment by state after state of sizes and weights identical or very similar to those promulgated by the Federal Government.

Right now, since the state legislatures mostly have adjourned, the attack on highway users, originating in this instance exclusively from railroad sources, is in regard to subsidies. It is a well known fact that the reiteration of any statement, true or untrue, gradually brings a lot of people to believe that it is true. So it is in regard to highway subsidies. The assertion in bulletins, in advertisements and otherwise, has been made so often "that the highway user is riding free," that some people accept this statement as being a substantial one. Those who assert that highway users are not paying their way conveniently fail to specify that in excess of one and one-half billion dollars annually are paid in special imposts by highway users, more than \$400,000,000 of which total amount is contributed by the operators of trucks.

Studying these vast contributions of highway users each year, Prof. H. E. Stocker of New York University, in a recent bulletin entitled "Is Motor Transportation Subsidized?" concludes that the highway users more than pay for state, county and local highways. In other words, the professor finds in his impartial and unprejudiced study that there is no subsidy for highway users. Those who like to assert that highway users are subsidized present the specious argument to prove their point by building up fictitious and hypothetical highway costs which, according to their argument, the highway user should pay. All who are genuinely interested in ascertaining what factors should and should not be included in

(TURN TO PAGE 104, PLEASE)



*Equip Your
Trucks with*

BAKER SNOW PLOWS

Fleet owners from coast to coast turn to Bakers for dependable snow plows for their trucks. Twenty-three State Highway Departments, the most important of America's industries and the largest of our cities in the snow region use Baker Snow Plows. New York City alone has hundreds of Bakers.

With twenty-two models of Snow Plows for motor trucks in V, one-way and reversible blade types from which to select, you are sure of getting a Baker that will meet your requirements.

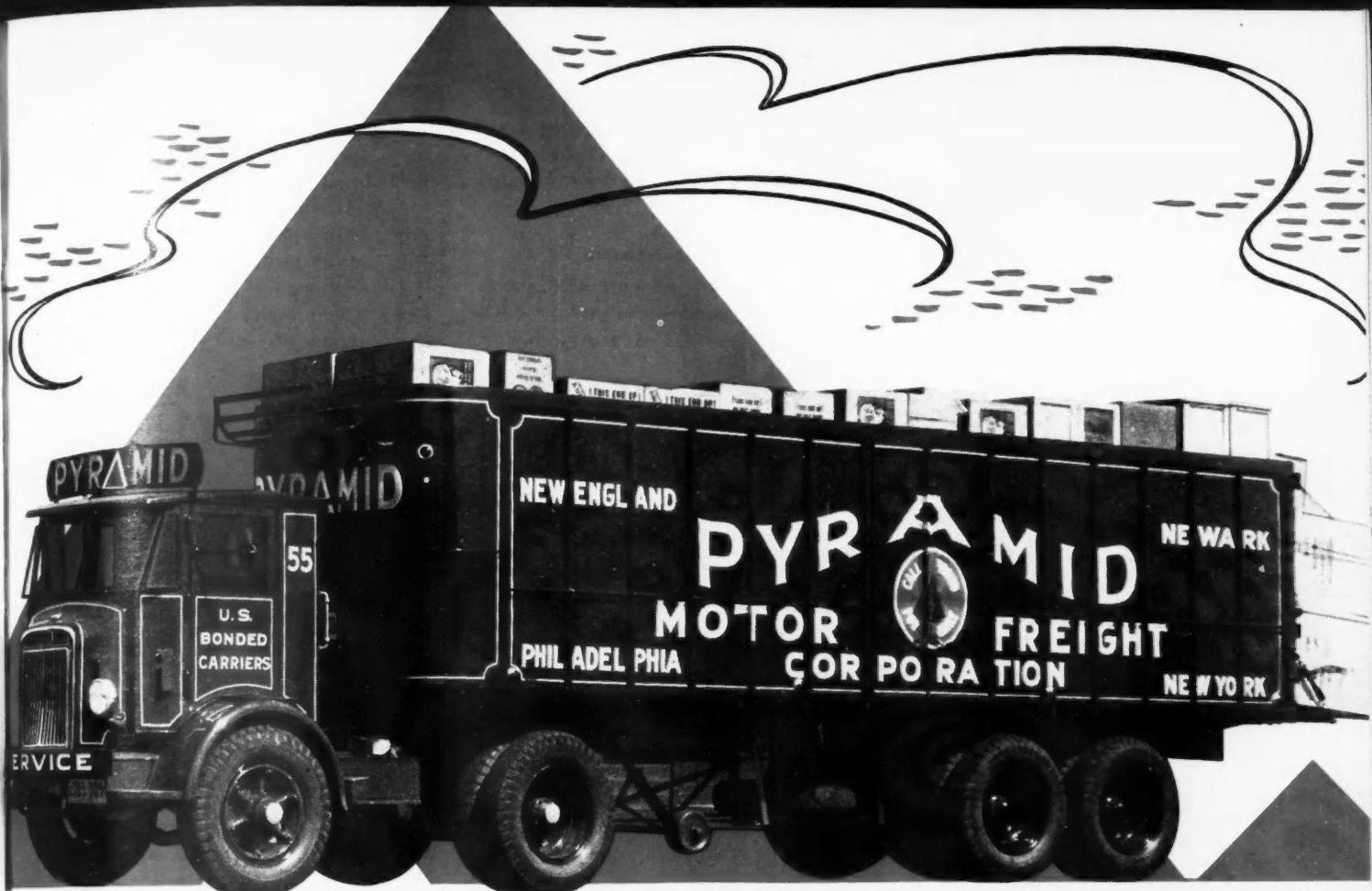
Ask for new 36 Page Snow Plow Bulletin 816.

THE BAKER MFG. CO.
571 Stanford Ave., Springfield, Illinois

BAKER

SNOW PLOWS FOR MOTOR TRUCKS





A Better BASE FOR PYRAMID *with* THERMOID BRAKE LINING

PAUL MAGEE, Pyramid's shop foreman, says:

"Since we have had the lining only two or three months, we, of course, do not know much about the length of its life. However, for the time we have had it in use, we do know that it has eliminated glaze which condition we encountered on other brake lining and it has completely eliminated chronic grabbing and squeaking on some of our more critical units. In adopting the brake lining, we first satisfied ourselves that Thermoid had a lining to meet our varying requirements."

The Pyramid Motor Freight Corporation is another of the great eastern carriers who have turned to Thermoid for the solution of their braking problems. Although they have been using Thermoid Brake Linings for only a few months . . . they have already turned in such excellent performance that Thermoid is being specified on all new units.

But read the statement at the left from Pyramid's shop foreman. Such a statement must suggest to you that you, too, could find a solution to many braking problems within the Thermoid line of Brake Linings.

Regardless of the size of the fleet you operate, or the traffic conditions it faces, you can be certain of efficiency and savings when you specify Thermoid. If your jobber can't supply you . . . write direct.

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CUSTOM-BUILT BRAKE LINING SETS • CUSTOM BRAKE BLOCK SETS • THERMO-BLOCKS FOR HEAVIEST DUTY

* THERMOID COMPANY * Trenton, New Jersey *

(CONTINUED FROM PAGE 102)
highway costs can find this question answered in a report of a special committee, consisting of five impartial technical students of transportation, published by the Illinois Highway Users Conference under the title, "Highway Costs and Motor Vehicle Taxation." The four university professors who made this study disposed of the controversy revolving around highway costs and subsidies by listing, so far as is known, for the first time in any publication those costs

which properly may be included and those hypothetical or fictitious costs which properly may not be included, as follows:

"Elements" To Be Included

The total annual cost of highway systems for purposes of motor-vehicle taxation consists of the following items:

- (a) Interest on outstanding highway indebtedness;
- (b) An annual charge sufficient to amortize the outstanding indebted-

ness over the service life of the highways for which the outstanding indebtedness is incurred;

(c) Administrative expense properly chargeable to the management and maintenance of the highways;

(d) An annual charge for maintenance and operation including repairs, renewals and replacements; and

(e) That portion of the state police cost properly chargeable to the patrolling of the highways.

"Elements" Not Proper To Include

(a) Interest charges other than on actual highway indebtedness;

(b) Assumed taxes on right of way and highways as property; and

(c) Depreciation and obsolescence.

The broad general attack on highway transportation from railroad sources and the occasional inability of highway user groups to work together are of themselves illustrative of current legislative threats to highway transportation. However, specific threats found in the attack on private transportation, the too great readiness to rush pell-mell into the 10-year program of the future, the continuation of diversion, the lack of uniformity in sizes and weights, and the allegations that highway users are subsidized, serve the useful purpose either of informing or awakening highway user groups to maintain and, wherever necessary, increase their efforts to preserve and protect highway transportation.

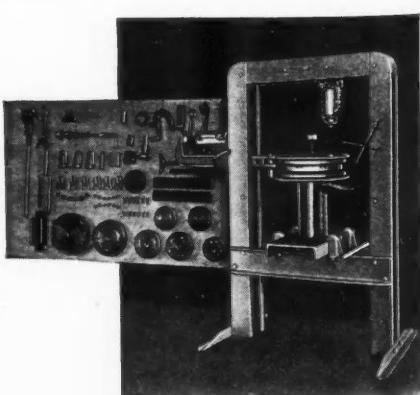
Bear Wheel Straightener

A new lower-priced wheel straightener for all steel, disk and wire passenger car types has been introduced by Bear. Equipped

Once a fleet operator uses GATKE Custom-Bilt Sets, he becomes a lifetime GATKE Booster, due to the impressive performance superiority—

Safe, trouble-free operation. Smooth, quiet stopping without grabs or squeaks. Easy on drums. Longer service with fewer adjustments. Uniform holding power at all operating temperatures. Lower maintenance costs.

Use GATKE Custom-Bilt Sets on your next five relines to discover performance value that will save you time and money.



with both overhead jack and portable hydraulic jack the unit includes all parts needed including steel fingers that can be adjusted to any type or size hub. Identified as models 320. Address Bear Mfg. Co., Rock Island, Ill., for details.

Personnel Changes

H. N. Ross, former sales manager of the Northwest District for International Harvester Co., has been appointed sales manager of the Eastern District, according to an announcement by W. F. McAfee, domestic sales manager for the company. Mr. Ross succeeds George E. Morelock, recently retired after 36 years with the company, as head of the eastern sales area.

Two related changes in Harvester sales management were announced simultaneously with the Ross appointment. A. J. Peterson, former assistant manager of the Eastern District, has been appointed manager of the Northwest district and W. K. Perkins, former manager at the company's Philadelphia motor truck branch, has been appointed assistant manager of the Eastern district, under Mr. Ross.

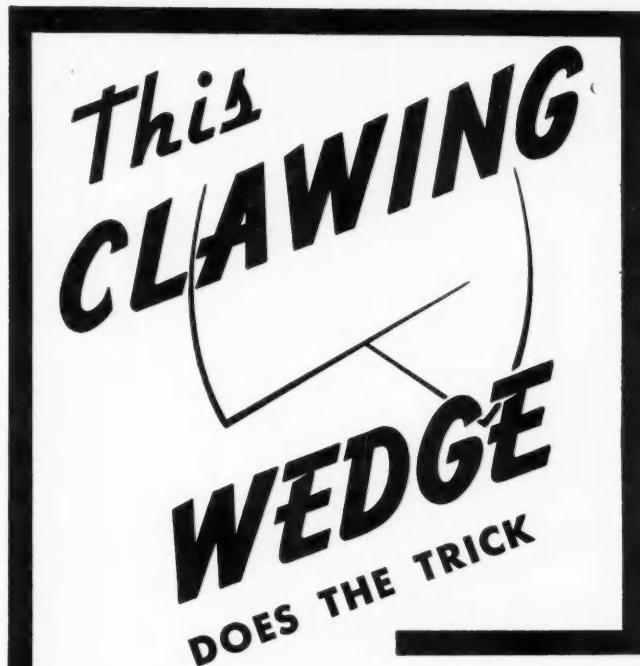
Reo Motor Car Co. announces the promotion of John T. Clark to vice-president of Reo Sales Corp., in charge of export sales.

New Truck Registrations by Makes by Months

Auto-car	Brock-way	Chevrolet	Diamond T	Dodge	Fed-eral	Ford	G.M.C.	Hud-son	Inter-national	Mack	Ply-mouth	Roo	Ster-ling	Stude-baker Indiana	Willys	Misc.	Total		
January.....1939	143	127	13,615	378	4,002	85	10,188	2,384	47	4,709	482	507	168	25	135	203	37,715		
January.....1938	130	64	10,338	337	3,145	118	9,304	1,777	103	4,551	257	691	217	16	161	301	229	31,995	
February.....1939	134	98	12,007	308	3,821	79	9,224	2,218	44	4,284	398	510	159	29	143	275	97	34,102	
February.....1938	96	57	9,174	350	2,677	110	7,863	1,424	81	3,847	223	587	184	9	147	319	142	261	27,551
March.....1939	150	168	16,565	392	4,832	122	11,886	2,772	39	5,507	483	879	175	17	190	373	148	365	45,083
March.....1938	110	86	12,598	395	3,752	138	10,175	2,010	79	5,382	367	798	281	17	163	388	178	338	37,255
April.....1939	149	139	16,388	515	4,688	137	11,831	3,170	53	5,617	547	1,014	106	24	172	421	141	291	46,201
April.....1938	119	127	11,824	421	3,618	130	9,437	1,898	79	4,880	370	766	263	26	184	356	175	391	36,034
May.....1939	184	177	15,899	427	5,185	173	11,706	3,215	44	5,359	686	1,118	78	45	196	442	166	301	45,381
May.....1938	193	159	10,918	378	3,252	96	9,117	1,853	68	4,372	383	678	281	25	224	366	172	393	32,937
June.....1939	162	177	14,049	408	4,442	123	10,606	2,740	47	5,105	588	889	53	25	209	446	185	228	40,482
June.....1938	235	116	10,034	340	3,085	97	8,510	1,762	67	4,136	321	692	224	21	159	313	197	328	30,647
July.....1939	309	170	15,432	438	4,562	116	12,514	2,872	43	5,744	541	946	31	28	229	379	133	271	44,747
July.....1938	120	99	11,225	382	3,236	117	9,425	1,675	67	4,752	347	660	284	34	116	337	182	398	33,475
August.....1939	185	146	14,327	449	4,769	158	12,990	3,031	28	6,101	524	793	28	38	238	377	92	209	43,523
August.....1938	88	111	11,268	397	3,286	125	9,471	1,908	61	5,381	370	593	231	23	209	289	158	281	34,231
Eight Months.....1939	1,407	1,202	118,642	3,316	36,328	1,008	90,063	22,475	345	42,522	6,667	798	231	1,547	3,086	1,054	2,191	337,096	
Eight Months.....1938	1,100	819	87,616	3,020	26,121	936	75,463	14,353	606	37,416	2,628	5,473	1,966	171	1,366	2,650	1,385	2,650	283,773
% Change Eight Mths.	+13	+15	+35	+9	+39	+7	+23	+86	-43	+14	+61	+22	-59	+35	+13	+15	-24	-17	+28

COMMERCIAL CAR JOURNAL
NOVEMBER, 1939

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*Guarantees sure grip...
Multiplies chain mileage*



It takes a super-built chain to withstand the "gaff" of heavy trucking operations—pushing through loads that run into tons, and getting them through on time.

CLAW Truck Chains are geared to this kind of service—built for abuse. Take the CLAW wedge of the cross chain link, for example. A revolutionary idea in chains! This knife-sharp wedge of extra steel bites in at the point of traction—gives a positive hold. There's 20% more metal in these CLAW links than you find in ordinary links (see diagram, upper left). And every CLAW cross chain link is built of CLAW-alloy, toughest chain metal known! No wonder CLAWS get trucks through quicker at minimum chain expense.

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Specify CLAWS for your trucks and get modern "traction insurance" at lowest cost per mile. Full particulars on request.

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General Offices: TONAWANDA, N. Y.

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CLAW★TRUCK CHAINS

This Body Hauls

IT'S MADE OF REPUBLIC DOUBLE STRENGTH STEEL

Five years ago, the coal company operating this truck equipped it with a body made of 12-gauge Republic Double Strength Steel instead of $\frac{3}{16}$ -inch carbon steel formerly employed, and cut one ton from the dead-weight. This meant an extra ton of pay load hauled free — every trip.

This body has seen service on three different chassis. The only repair expense charged against it was for damage caused by collision with a street car. And after five years of steady service, carrying stoker coal of high sulphur content and treated with calcium chloride, micrometer readings show the metal to be a full 12-gauge. This is a real tribute to its remarkable resistance to corrosion, in view of the fact that the life of the heavier bodies formerly used under the same conditions was never more than four or five years.

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REPUBLIC DOUBLE STRENGTH STEELS
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LIGHTER • STRONGER • MORE CORROSION-RESISTANT

an Extra Ton-FREE

Republic Double Strength Steels are the original copper-nickel-molybdenum high tensile alloys. Two grades are available in sheets, plates, formed sections, bars, rivets, bolts and nuts. Properly engineered into mobile equipment of every type, these steels will add strength and life to your product, at the same time reducing maintenance and operating costs.

May we send you technical literature?



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Sheets — Strip — Plates — Hot Rolled and Cold Drawn Bars — Pipe — Tubing — Bolts — Nuts — Rivets — Wire — Welding Rod — Boiler Tubes

FUTURAMA

(CONTINUED FROM PAGE 29)

because that is the way it has been done since the automobile industry was born.

What's wrong with having the motor in the forward position? For one thing, it interferes with the clear vision of the driver and, therefore, is a definite factor in accidents. Of lesser importance is the fact that it contributes directly to discomfort

through vibration, odor, excess heat.

Geddes does not believe that the motor necessarily should be removed to the rear. The important thing is to take it away from the front of the vehicle. In its present form, the designer points out, the motor is so high that it must be placed outside of the area occupied by the truck body. By decreasing its height, he explained, the motor could be placed within the body area. It might be put under the floorboards of the body, just ahead of the driving

wheels. Or it might be placed under the driver's seat. In either position, the vital mechanism of the truck would be well protected against backing-up accidents, which constitute a big percentage of property damage accidents in the truck field.

The important step, Geddes emphasized, is to place the motor somewhere other than at the front of the truck where it now adds considerably to the over-all length. Once this is done, additional space for pay-load will be available, thus increasing the truck's efficiency.

With the motor removed from its prominent front position, says Geddes, the present long transmission shaft may be eliminated. Considerable power, he points out, is lost in transmission, and the longer the transmission shaft the greater the losses.

Geddes maintains that all the truck's vitals—clutch, transmission, differential, etc.—should be combined with the engine to form a single, compact unit, more easily repaired and serviced. At present, he claims, these various parts are distributed throughout trucks and cars as though by chance.

With the long drive shaft eliminated and the motor removed from the front of the truck, Geddes' next step may be taken. The center of gravity may be lowered, decreasing the danger of overturns at high speeds which Geddes anticipates for the trucks of tomorrow.

A lowered center of gravity will be the first step toward effective streamlining. Geddes concedes that moves have been taken in this direction—but timid ones. Any truck he designs would be streamlined to the greatest degree. Through streamlining, Geddes says, it is estimated that truckmen will be able to save as much as 25 per cent in fuel costs!

All surfaces and projecting gadgets on the present-day truck that can be removed should be dispensed with so as to reduce wind resistance. In other words, as Geddes defines streamlining, the truck should be so designed that it creates "the least disturbances in the air in the form of eddies or partial vacua tending to produce resistance." The design should avoid wasted space in the truck interior which would decrease efficiency and economy by cutting

(TURN TO PAGE 114, PLEASE)

OUT OF SIGHT and OUT OF MIND *Bendix Drive!*



One specification a manufacturer doesn't have to think about after it is once included is the Bendix Drive. And it's seldom that a truck dealer has occasion to render any kind of maintenance service on a Bendix Drive either.

For, year after year through billions of effortless starts the Bendix Drive has proved its reliability. Small, hidden away out of sight it is truly out of mind as well.

Although the Bendix Drive has been frequently improved as to design and operation, no better principle of engine starting has ever been discovered. Adaptable to every type of starting control, the Bendix Drive automatically takes hold, starts the engine, lets go—meanwhile protecting the starter from damage in case of inadvertent operation.

However when service is needed on Bendix Drives it is important to use only genuine Bendix Drive service parts. Only in this way can you be sure of a renewal of the reliable, satisfying operation for which Bendix Drive is famous. Every genuine Bendix Drive part is marked for your protection.

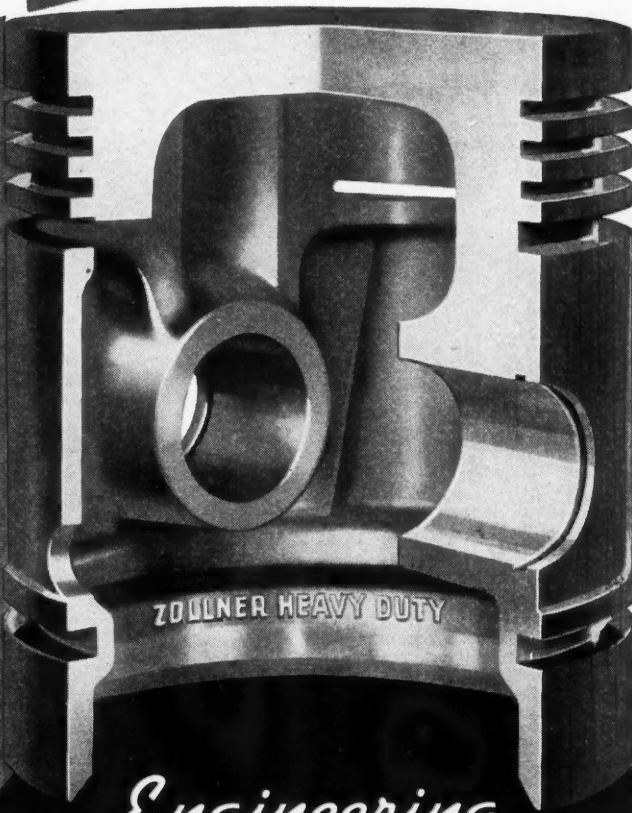


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NOVEMBER, 1939

PISTONS by ZOLLNER



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for Gasoline Engines • Carbureted
Oil Engines • Solid Injection Spark
Ignition Engines • Diesel Engines

ZOLLNER MACHINE WORKS • FT. WAYNE, IND.

(CONTINUED FROM PAGE 112)
down carrying capacity.

These eddies and partial vacua, Geddes asserts, are robbing truck operators to an extent few, if any, of them realize. Trucks of today, the designer believes, use at 40 miles an hour as much as 25 per cent of their power simply in overcoming wind resistance! Eliminate the wind resistance—particularly the vacuum at the rear of the truck body, which is the biggest power thief of all—and fuel costs will be pared sharply.

As Geddes outlines his ideas, it is apparent that he has considered the problem of highway transportation from all angles. He realizes that vehicle, driver and highway must be improved together if genuine progress is to be made. He realizes that speedier and more efficient trucks would be of little significance if highways were not designed and built to keep pace with them, and if controls were not set up to check the inescapable errors of human judgment.

Application of the principle of

aero-dynamics, the designer explains, obviously will be a vital factor controlling the greater speeds of tomorrow. Truck operators who have visited the General Motors' "Futurama," which depicts highways and motor vehicle operations as they conceivably might be in 1960, have some idea of the speeds Geddes expects for the trucks of the future. Visitors to the General Motors' show see a close-up of the seven-lane, one-direction highway which Geddes has envisioned. Traffic along its seven lanes moves smoothly at even speeds of 50, 75 and 100 miles an hour. Trucks and passenger cars alike use the great roadway. And trucks are in all the speed lanes, some going at 50, some at 75 and some at 100!

Geddes is a firm believer in truck transportation, and the Futurama shows it. The mere fact that trucks and passenger cars share the great roadway together is significant in view of current demands that commercial vehicles be required to maintain their own rights-of-way, just as the rails do. In his broad scheme for a system of national express motorways, Geddes has anticipated a steady growth in truck traffic.

In this connection, Geddes believes that trucks and non-passenger cars will increase to such an extent that ultimately they may outnumber private vehicles on the highways of the future. Besides an anticipated normal growth in commercial traffic, this belief is based on further diversion of light freight from other forms of transportation, plus the growth of air passenger traffic. Once a national system of super-highways is constructed, Geddes believes, many new, untapped markets will be opened up, thus bringing new traffic to commercial highway transport.

The "Futurama," which necessarily presents the picture of tomorrow's motor vehicle operations in broad general terms, raises a host of questions in the truck operator's mind. Why does the speed of trucks never vary? How do they get on and off the super-highway from feeder roads? What about interstate barriers in the form of toll bridges, ports of entry, etc.? What about the safety angle? Geddes believes he has the answers.

Consider the question of uniform speeds. Geddes has had definite ideas on this for many years. To begin with, he contends, there is nothing morally wrong with a truck

(TURN TO PAGE 116, PLEASE)

NOW HEAVY DUTY *Slam-tite* LOCK for PANEL BODIES



*new rugged
design
improved
construction
easier
installation*

The outstanding success of the Eberhard SLAM-TITE lock for lighter panel bodies has led to the production of a Heavy Duty SLAM-TITE for heavier bodies also.

Now it is ready for you—with a new Corbin locking device that can be opened from the inside and ample sturdiness for the heaviest panel body doors. Or you can get it plain without the key lock.

All other features that have made the Eberhard SLAM-TITE design famous are also included. Ask for No. 5606, complete with Corbin lock and finger latch, as shown; or No. 5609, without Corbin lock.

Write for complete details and prices or see your dealer.

Eberhard Manufacturing Company

Division of the Eastern Malleable Iron Co.

Cleveland, Ohio

EBERHARD TRUCK BODY FITTINGS Long Run
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LUBRICATING OIL

REMOTES CARBON; has STRONGER NATURAL FILM

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MOTOR OIL AND DIESEL ENGINE OIL

NEW TYPE OILS RESTORE POWER AND
SAVE FUEL BY REMOVING HARD CARBON;
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SAVE WEAR

Why is it that month after month the records of fleets using Lion Naturalube reveal that power was conserved, that fuel was saved, that fewer lay-ups for engine overhauls were necessary?

It's because the basically different characteristics of Lion Naturalube strike at the very roots of engine troubles. Unlike lubricating oils of other types Lion Naturalube does not choke up engines and rob them of power by gradual accumulations of hard carbon. Because of its solvent and penetrative properties Lion Naturalube removes hard carbon and allows rings, pistons, valves and spark

plugs to function properly. Thus power is conserved and fuel saved. Furthermore, Lion Naturalube's stronger natural protective film reduces "drag" and is a safeguard against excessive wear caused by oil-film failure.

Give Lion Naturalube a thorough trial and you will be rewarded with an actual cash savings. Next time order Lion Naturalube Motor Oil or Lion Naturalube Diesel Engine Oil according to your needs.

For visible and understandable proof of Naturalube's money-saving properties and details of money-back guarantee, phone the nearest Lion Naturalube dealer or write Lion Oil Refining Company, El Dorado, Arkansas.

LION OIL REFINING CO.

EL DORADO, ARK.



(CONTINUED FROM PAGE 114)
going 75 or 100 miles per hour, or even more. The drawbacks lie, first, in the fallibility of the driver; second, in the design of the vehicle, and third, in the design of the highway. Take away the dangers inherent in these three factors, he declares, and speeds of 100 miles per hour or more, instead of being dangerous, actually will be safer!

"In present-day traffic," the designer says, "the guidance of a truck and all other highway vehicles is en-

tirely in the hands of the driver. That driver is prone to fatigue, to inattention, to reflexes, to normal reactions and to bull-headedness. As a result of these human failings, traffic moves slowly—and dangerously.

"This obstruction can be overcome only by providing for automatic guidance of the car or truck on the highways. True, drivers can be improved with education, but this is not enough. Controls must be set up which are part of the highway, as well as of the car itself.

"In general, each vehicle may be guided by receptive instruments within it to pick up magnetic impulses. These may be magneto-electric waves or light waves. They might be transmitted by short wave from one car to the next, or they might be picked up from a control axis or guide strip extending along the highway right of way or underneath the road surface.

"The waves might be sent out over this control axis from highway control stations spaced at intervals of, say, five miles. This embodies the principle of remote control.

"This kind of an axis could accelerate or decelerate the engine of a motor vehicle so as to govern the speed of one car or a continuous line of vehicles. Intervals between vehicles could be controlled by the electric eye or some such device, so that distances between them would never vary. Cars also would be kept in their speed lanes in alignment, to prevent passing, sideswiping or any accident due to driver faults. In other words, vehicles would move along as though on a high conveyor belt, but motivated by their own power, of course.

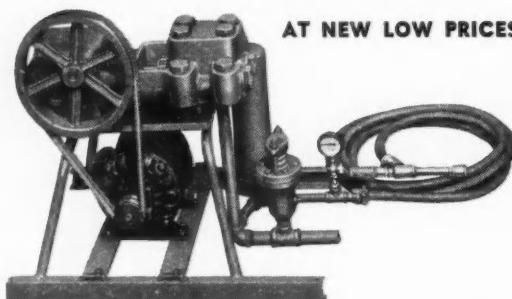
"Although a driver might turn over virtually the entire control of his truck to the signal tower system, he would not be eliminated entirely from sharing in the operation. For instance, the signal system would permit the driver to communicate with the tower men so that the latter might transmit instructions for ingress and egress to the express roadway. The tower operators could reset the automats to meet the needs of a single vehicle. During this process, automatic controls would prevent any accidents which might result from failures of the tower operators."

In other words, Norman Bel Geddes believes a truck driver will be able to do 100 miles per hour in safety without even putting his hands on the wheel, if he so desires. Coast-to-coast runs in a little more than a day will be possible!

When any comprehensive national highway system is constructed, Geddes believes, it will carry with it a promise to solve one of the industry's most perplexing problems—barriers set up between the states. While the designer does not think that all state tolls and fees levied on out-of-state trucks will be eliminated, he does foresee the adjustment of such

(TURN TO PAGE 120, PLEASE)

Announcing the **NEW** CURTIS CAR WASHER



AT NEW LOW PRICES

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- Precision Workmanship
- Built by the Pioneer Car Washer Manufacturer

Here's a brand new Curtis car washer that will help you keep your cars and trucks looking spotless at minimum cost. Curtis' long experience and skill in building fine washers will bring you extra savings because these features increase efficiency and cut your costs:

- Silent V-Belt Drive
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CURTIS TRUCK AND BUS LIFT



Hydraulic—oil-locked—safe at all heights. Generous structural safety margin. Controlled lowering speed. Wheels hang free for brake and wheel adjustments. Six and ten ton capacities. Also two-post types.

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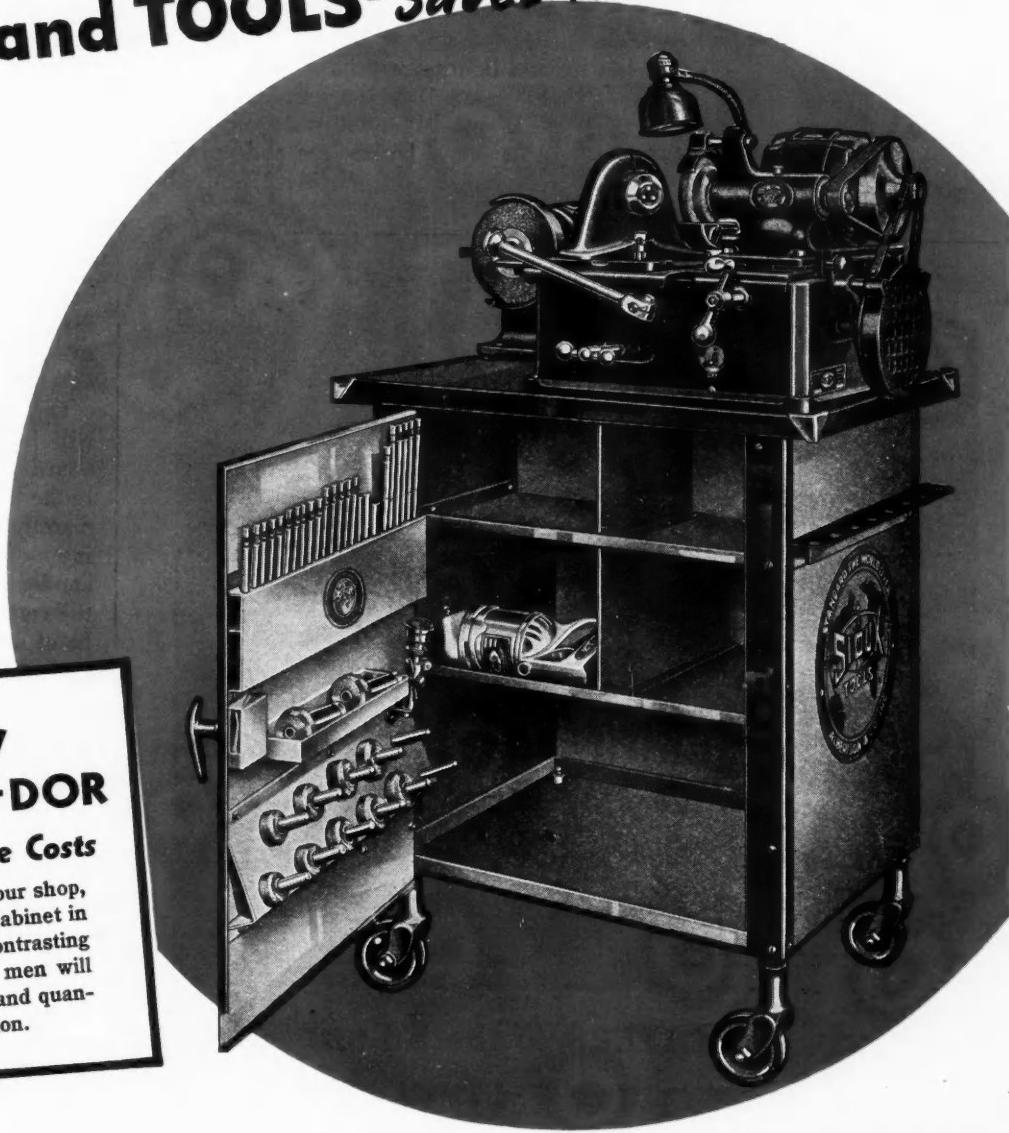
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NOVEMBER, 1939

SIOUX VALVE SERVICE

CABINET and TOOLS-Saves Time and Energy



**with handy
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Save on Maintenance Costs**

Efficiency will step up in your shop, when this neat attractive cabinet in gleaming yellow with contrasting black trim rolls in. Your men will improve both the quality and quantity of their daily production.

How much effort do your mechanics waste on every reconditioning job in chasing around for tools and parts? . . . Change this lost motion into *productive* time by equipping with the SIOUX Valve Service Cabinet and Tools. This handy arrangement wheels all the tools and parts right up to the job and keeps everything right at the mechanic's finger tips. The men can do *more* and *better* work.

COMPACT...COMPLETE...CONVENIENT

No. 688 SIOUX Valve Service Cabinet unit includes the SIOUX Valve Face Grinding Machine, Seat Grinder, Cabinet and Bench Grinder, Heavy metal cabinet, easy-turning casters, double electric outlet, 25 ft. cord —two valve racks—lock in door handle.

FOR THE PAST 25 YEARS, Sioux has been a leader in anticipating the needs of the Automotive Trade.

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STANDARD THE

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SELLS IT . . .

WORLD OVER

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(CONTINUED FROM PAGE 116)
taxes to make them less burdensome. A national highway planning authority would have effective control over the flow of traffic between the states. While such an authority's powers naturally would be limited by state rights, Geddes feels it will be able to work out some plan removing some of the delays and headaches which now hamper truck operators, and at the same time retain for the states their tax revenue. The designer suggested that perhaps levies for an

entire trip may be collected at the point where the truck starts its journey on the roadway. This revenue then would be apportioned between the various states through which the vehicle passes.

When the day comes that trucks travel 100 miles an hour, Geddes says, the operation of brakes, wheel design and lighting will have to be changed radically.

He called attention to what happens when brakes are suddenly applied on a truck moving 25 miles per

hour. The driver and occupants are thrown suddenly forward. Multiply this four times or more, and the magnitude of the problem will be apparent. Geddes thinks it may be necessary to connect the brake pedal to a vacuum motor which will permit a gradual, even pressure to be applied to the brake. The human foot cannot accomplish this.

Lights, he maintains, should turn with the front wheels so that the beams always are directly on the road. On super-highways, the lights should be built into the highway itself. Blow-out proof tires—these are now on the market, of course—will be universally used. They may be inflated with non-expanding gas, such as helium, making frequent tire checking unnecessary.

On the truck of tomorrow there will be no mudguards, no running boards. The wheels will be enclosed in the body. With the steering wheel directly over the forward axle, steering mechanism will be simplified. Air conditioning might be provided for the comfort of drivers. Springs will be of entirely new design, permitting each wheel to be independently sprung.

When all this will be accomplished, neither Geddes nor anyone else knows. But Geddes is convinced that the era in which we "glorified the gadget," and became the victims of our own mechanical ingenuity is over. Man has not yet mastered the machine, but he is showing signs that he is making progress toward that objective.

"Of one thing we can be sure," Geddes says. "All the industrial design we have had so far is comparable, in effect, to a pebble dropped in a pond. The circles that have agitated the surface will continue to widen and spread. By the middle of the present century I anticipate that we shall have begun consciously to achieve complete mastery of the machine."

"At the moment we are still thinking too much in grooves. We still are too much inclined to believe that because things long have been done a certain way, that that is the best way to do them. Following old grooves of thought is one way of playing safe. But it deprives one of initiative and takes too long. At times, the only thing to do is to cut loose and do the unexpected. It takes more than imagination to be progressive. It takes courage and vision."

**LETTERS to the Editors
Prove Reader Interest**

Since MOTOR AGE has been edited for Independent Service Stations only, AUTOMOBILE TRADE JOURNAL for Car Dealers only, and MOTOR WORLD WHOLESALE for Wholesalers only . . . 1 out of every 11 readers writes to the Editors.

When AUTOMOBILE TRADE JOURNAL was an all-coverage, omnibus publication reaching these three fields . . . 1 out of every 25 readers wrote to the Editor.

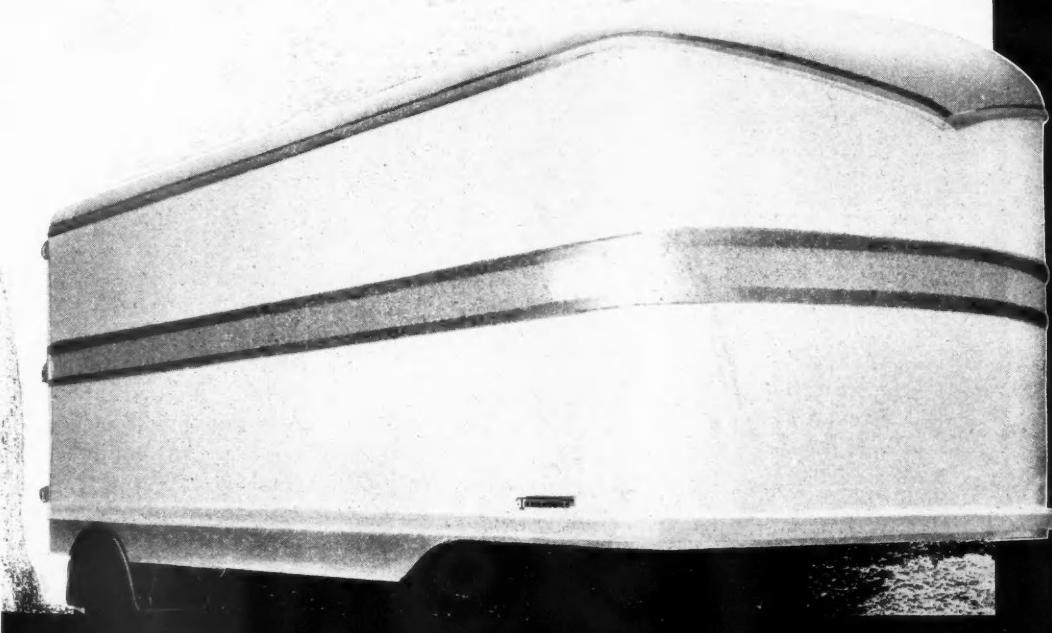
That makes over twice as much evidence of reader interest in these specialized publications.

CHILTON COMPANY
CHESTNUT and 56th STS. PHILADELPHIA, PENNA.

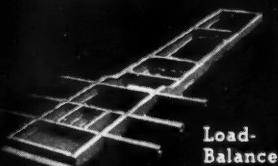
IMPORTANT FEATURES MAKE TRAILMOBILE THE EASIEST PULLING TRAILER ON THE ROAD

Empty or loaded to capacity Trailmobile has earned the reputation with drivers and owners of being the easiest pulling trailer on the road. The Timken tubular axle, direct connected radius rod, cradled spring suspension—even details of frame construction, cross members and position of spring hangers—lend to greatest load carrying capacity and lightest weight. And the scientific balance of all these correctly designed elements add up to make Trailmobile easy pulling qualities and long, low cost operation.

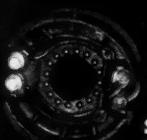
**TRAILMOBILE for SAFE
OPERATION and PROFIT**



Cradled
Spring
Suspension



Load-
Balanced
Frame



Super
Safety
Brakes



Timken
Tubular
Axle



• The Trailmobile Safety Trophy, annually awarded under the direction of ATA, to the operator who is best prepared to render service to the public on the highway. This is a mighty factor in building good will for the highway freight industry. Enter this competition by application to ATA, Washington, D. C.

THE TRAILER COMPANY OF AMERICA, CINCINNATI, OHIO

ENGINEERING FORECAST

(CONTINUED FROM PAGE 21)

viding the driver with passenger car acceleration and possession of it represents an expense to the operator. Brakes will be better not particularly because of design but because of more generous area. Brake performance is adequate, but brake life on these units does not yet please the operator and consequently will be improved. Maintenance accessibility may improve. There is a demand for

improvement in this direction, but improvement in accessibility will be sacrificed if it interferes with progress in another direction. This is the history of all truck manufacture.

Two engineers see diesel progress or, more accurately, diesel acceptance as powerplants for trucks, challenged from two directions. One refers specifically to larger trucks when he says, "A development which seems to offer a far more serious threat to a continued growth of diesel engine utilization is embodied

in the development or utilization of butane and propane fuels, particularly the latter. These fuels, or blends of them, offer higher specific output together with greater economy, smoother and more responsive operation and greatly reduced maintenance, utilizing engines operating on conventional cycles but with considerably higher compression than present-day gasoline engines."

The second diesel challenge, according to a chief engineer who buys engines for all of his vehicles, is not in the larger sizes but in the smaller ones. This engineer thinks that diesel engines have a definite place in the larger sizes, but that the spark ignited fuel oil engine is a much more reliable powerplant in the small and medium size trucks than the full diesel.

Sleeves for the surfaces of cylinders is a subject that is occupying the time and attention of a number of engineers. However, there does not seem to be any concerted making up of minds, which leaves the use of cylinder sleeves about where it was. The problem is to decide whether the use of hardened sleeves will cost the operator less money than cylinder reconditioning. The nearest thing to a positive opinion we are able to report is that sleeves are probably a good feature in large engines, but in small ones it is economically possible to produce a block sufficiently hard to throw the wear back on the piston rings and it seems like the smart thing to do. However, it should be noted that one large producer of engines has this year slipped a number of sleeved engines into production without any publicity. These are of smaller size.

The real hard sleeves seem to demand expander type piston rings as standard equipment. It looks like expander type rings will continue to grow in favor with or without cylinder sleeves that might make them necessary as standard equipment. In 1939 expander type rings became standard equipment in one make of engine and the use of expander rings in maintenance work continues to demonstrate their value.

The driver is not to be neglected. One report states, "More attention will be paid to cab construction, particularly with respect to the driver, and items affecting his comfort such as arrangements for heaters, defrosters, better sealing of doors, windows and floorboards."

Body designs copyright E. M. Westberg

**AROUND Build Your Bodies
-as Modern as
the Most Modern Body**

HANSEN HARDWARE has the unusual combination of modernness of design and built-in stamina to withstand the most severe commercial body service. Simple in design—easy to apply—dependable in operation—it is *built* for service and gives it!

Ask for Catalog

No. 12 Leaf-Type Hinge
No. 60 Extension Lock
No. 66 Refrigerator Lock
No. 85 Window Regulator
No. 111 Heavy-Duty Lock
No. 117 Slam-and-Take-up Lock

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A.L. HANSEN MFG.CO.
THE HARDWARE FOR HARD WEAR

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COMMERCIAL CAR JOURNAL
NOVEMBER, 1939

PLIGHT

(CONTINUED FROM PAGE 31)

qualifications and minimum hours of service of employees, and safety of operation and equipment.

2. To regulate contract carriers by motor vehicle, with respect to the same features or items so far as here pertinent.

3. To establish for PRIVATE CARRIERS of property by motor vehicle, IF NEED THEREFOR IS FOUND, reasonable requirements to promote safety of operation, and to that end prescribe qualifications and maximum hours of service of employees and standards of equipment.

The legislative history of that Act convinces private motor truck owners that during the process of incubation for more than eight years before the Motor Carrier Act was passed and became law, the term "private carrier" meant to the legislators a for-hire carrier—and not a person transporting his own merchandise in his own vehicle. The private carrier was, and still is, identified by definition as to what is regarded in the Motor Carrier Act as a contract carrier.

Striking evidence of this is found in recent correspondence between a private motor truck owner and one of the sponsors of the national transportation measure that was seriously considered in the last session of Congress. The operator wrote to the sponsor indicating that it would work a hardship on his distribution if his trucks were placed under ICC jurisdiction. The lawmaker replied that the measure did not contemplate the regulation of vehicles operated by shippers in moving their own commodities and for which they do not receive transportation fees or other payment for such services.

Obviously, the Act needs clarification. In the meantime, efforts to apply it in the regulation of private motor trucks can result only in compounding chaos.

The owner and operator of a private truck considers that his plight affects not only his business but the health, happiness and well-being of every family in the United States.

The private motor truck owner believes that a public, enlightened regarding the attempts to regulate and restrict the use of private transportation, would be shocked at such

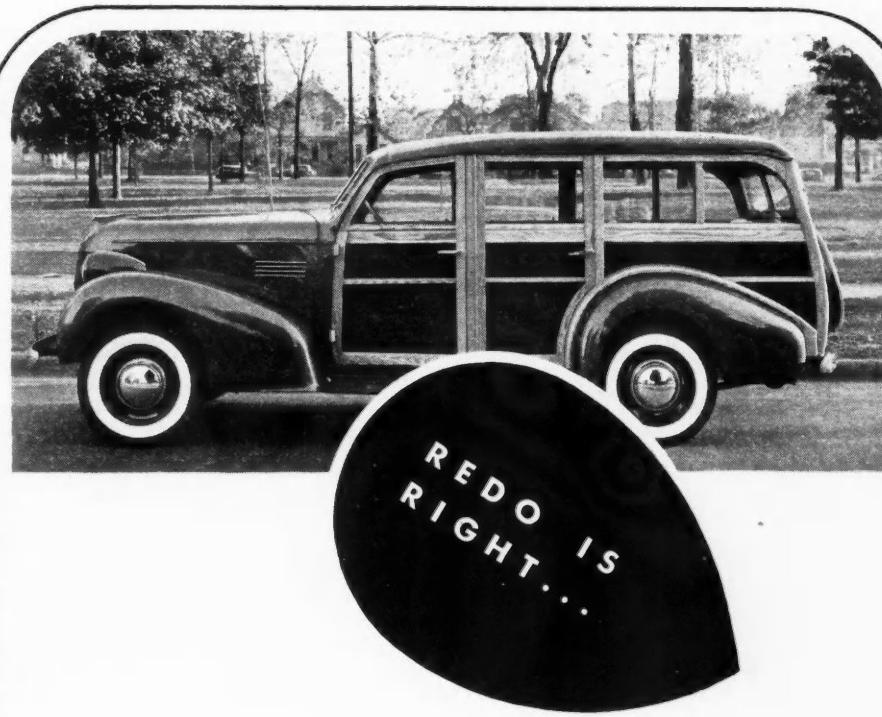
activities as evidenced in the words and actions of men in public life. Restriction of the use of private transportation was strongly urged in recent Congressional debates on railroad relief legislation.

"Just how far should an individual corporation not a common carrier go in transporting its own goods?" is a question raised recently by a member of the Interstate Commerce Commission. He complained that the privately owned truck, not subject to the regulation applied to railroads and

other common carriers, "sets the rates for the common carrier truck." In answer, the butcher and baker and oil man ask, "Can the difficulties of the railroads and other public utilities be solved by penalizing the more flexible, economical and efficient private truck operations and by crippling and increasing the costs of services which the consumers of the United States now enjoy?"

To the average private motor truck owner, like the average private car

(TURN TO PAGE 128, PLEASE)



... for a station wagon, heavy-duty or delivery truck, taxi-cab—for any type of service where a really tough upholstery is needed. Redo's a coated upholstery that will stand up and take it no matter how hard the service! It's washable with soap and water... made from rubber mixed with genuine leather fibres to add wearability. Specify Chase Redo for reupholstering or in new equipment.



L. C. CHASE AND COMPANY, 295 Fifth Avenue, New York City
Selling Division of Goodall Sanford Industries

Mills: Sanford, Me.; Reading, Mass.—Offices: Boston, Detroit, Chicago, Los Angeles

REDO is standard in this Hercules Body Company, Pontiac chassis, station wagon... the top is Chase Decking.

(CONTINUED FROM PAGE 127)

owner, free access to the highways, under such jurisdiction as is in the interests of everyone, seems to be in the same category as free access to the air and sunlight. The threatened loss of freedom of opportunity in using the highways is not merely the plight of the private truck owner, it is a problem that confronts the American people.

Nor is the plight of the private truck owner confined to those of his operations (less than 10 per cent of

them) which go over state lines. The campaign to restrict the use of American highways by private truck owners continues with increasing intensity in the various states. This drive is in the direction of the application of regulations and restrictions to the privately owned and operated trucks which are now applied to common carriers.

In several states, because private owners' views have not been adequately presented, there are laws on the statute books and regulations

promulgated by utility and railroad commissions which place private motor truck owners under the same business regulation as common and contract carriers. Washington and Texas are among those states.

In several other states there are efforts to equalize the tax between private and for-hire motor truck owners by increasing the tax on privately operated vehicles. Bills of that nature were introduced in several of the state legislatures in 1939.

In many states the private motor truck owner submits to regulation as to the size and weight of vehicles, the equipment required, and other regulation designed to promote highway safety and the effective use of the highways in the best interests of everyone concerned.

Only within the past year has the private truck owner had the benefit of an instrumentality through which his position might be voiced before federal and state legislative bodies. After more than two years of intensive research and conferences on private motor truck owners' problems, undertaken by special committees of farm and industrial groups, the National Council of Private Motor Truck Owners, Inc., was organized and incorporated in July, 1938. Membership in the Council consists of national and state associations of private truck owners, including farm organizations, and individual operators of privately owned trucks in uses incidental to their operations in the oil, milk, ice cream and other businesses. Its membership today is representative of nearly 1,500,000 privately owned trucks, of which approximately 1,000,000 are on the farms.

The Council recently established headquarters in Washington and has completed plans for the rapid and substantial development of a field organization, research and other informational services.

The private motor truck owner is in his present serious plight largely because, as a private citizen conducting his private business as a farmer or grocer, he has been so absorbed with his business problems that he has not been cognizant of the dangers to him as a private motor truck owner. His plight can be lessened, and consideration for his rights and privileges can be assured, when he realizes the need for organization.

DIRECTION FOR THOSE "AT SEA"

Mariners at sea are directed safely to port by the never-failing guide of coast lights.

Chilton publications are the guiding light of automotive manufacturers "at sea" in their advertising plans.

Past the rocks of waste and extravagance, up the channels of precision and economy, the directed editorial effort of Chilton magazines bears them straight to the ports of profit.

Automobile Trade Journal, for car dealers only; Motor Age, for independent service stations only; Motor World Wholesale, for jobbers only; Commercial Car Journal, for fleet owners only; Automotive Industries, for executive and purchasing personnel of automotive industrial manufacturing plants.

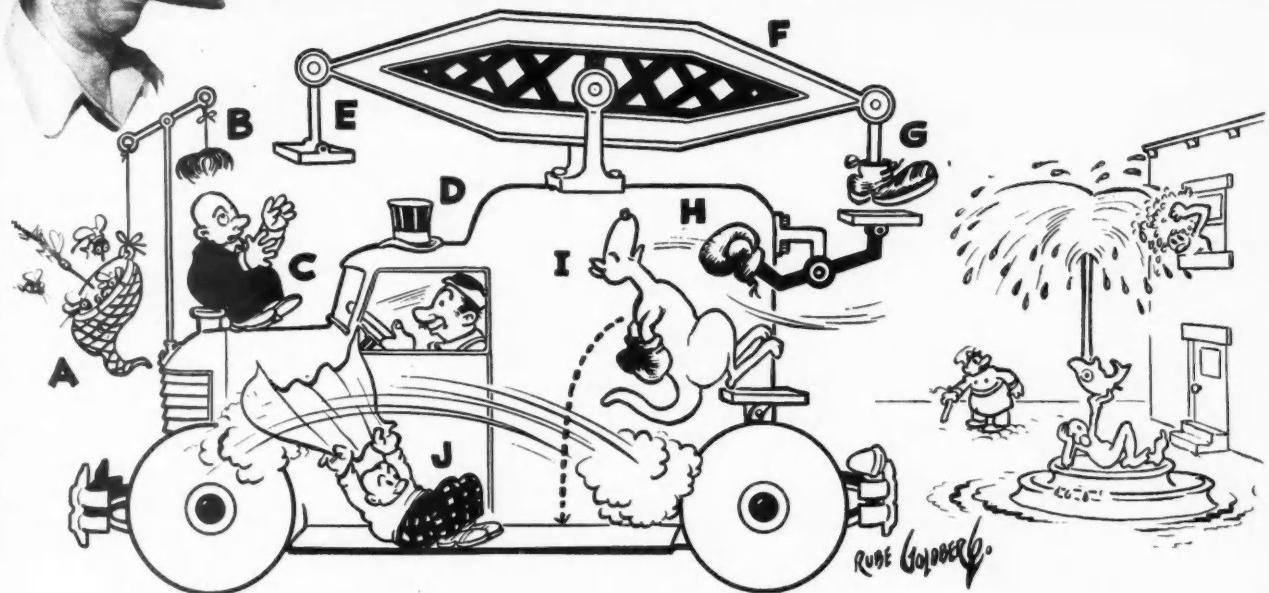


CHILTON PUBLICATIONS

Chestnut and 56th Streets, PHILADELPHIA, PA.

RUBE
(Goldberg)
SAYS-

"TRY COOLING YOUR
TRUCK TIRES THIS WAY"



BUGS FLY INTO NET (A), LIFTING TOUPEE (B) FROM HEAD OF VAIN MIDGET (C) ~ MIDGET REACHES FOR HAT (D), HITTING HEAD ON PLUNGER (E) — WALKING-BEAM (F) LOWERS SHOE (G), CAUSING GLOVE (H) TO KNOCK OUT BOXING KANGAROO (I) — TRAINER (J) FRANTICALLY WAVES TOWEL TO REVIVE KANGAROO AND BREEZE COOLS TIRES!

GOODRICH says: Here's a New Longer-Mileage Truck Tire That Doesn't Overheat!

• Do your trucks go like the wind? Do you carry loads that make the axles groan? In either case, here's news for you! We have a new truck tire that's specially built for just such conditions. It's the new Triple Protected Silvertown—a tire that licks the problem of excessive tire heat caused by high speeds and heavy loads.

HERE'S MILEAGE YOU NEVER DREAMED POSSIBLE

But maybe yours is an ordinary operation with no special problems. Don't you think that a tire that stands up on the toughest hauls on record will do a better job for you, too? And it's a fact! On tire-killer runs, where other tires blew out, the new Silvertowns ran 2 and 3 times longer than the best tires used before.

These tires run cool because they are built with Hi-Flex Cord—a new type compact cord which is stronger and more

elastic. It retains its strength and elasticity throughout the life of the tire. Because it is more compact, it is possible to build a less bulky tire—a cooler-running tire.

But Hi-Flex is only one of three reasons why Silvertowns will give you the kind of mileage you've always wanted but never obtained from conventional truck tires. The other two are Plyflex, a tough outer ply which distributes stresses throughout the tire, and Ply-Lock, a new method of anchoring the beads in place.

Taken together they give you the greatest value ever offered by Goodrich, America's oldest tire manufacturer.

SAVE ON EVERY MILE

Imagine the drop in your tire bill with the extra mileage and freedom from heat failures you get with Silvertowns. And every extra mile means a clear cash saving because right now you can purchase the new Goodrich Silvertowns at no extra cost! There's a Goodrich dealer or Goodrich Silvertown Store nearby. Drop in soon!

READ HOW NEW GOODRICH CORD PROLONGS TIRE LIFE . . . SAVES YOU MONEY

Hi-Flex Cord is more compact, more elastic—yet actually stronger than ordinary cord. When stretched it "comes back alive," preventing tire "growth." Due to this cord's smaller size Goodrich can (1) surround it with extra anti-friction rubber

(2) give the tire more strength with less bulk. Tests prove this construction makes the new Silvertown run cooler . . . last longer. You get more mileage per tire dollar!



Goodrich *Triple Protected* Silvertowns

SPECIFY THESE NEW SILVERTOWN TIRES FOR TRUCKS AND BUSES

3,000,000 MILES

(CONTINUED FROM PAGE 33)

istration and the State Highway Departments in national defense needs.'

"In order to advise the State and Federal agencies relative to highways of value to national defense, a study was completed by the War Department in collaboration with the Public Roads Administration in 1922. . . .

"As a result of that study, the so-

called 'Pershing Map' showing highways of strategic importance was printed in 1922. The map was revised in 1935 and the latest revision, now called the War Department Special Highway Map, was approved by the Chief of Staff last month.

". . . The standards of construction desired are as follows:

"Surface—Hard surface, capable of supporting 9000-pound wheel load on pneumatic tires.

"Width—Minimum of 20 ft. Bridges to be four ft. in excess of

approach roads.

"Bridge Load Capacity—Minimum H-15 loading.

"Grade—Non-mountainous areas, maximum of 5 per cent in lengths greater than 500 ft.; mountainous areas, maximum of 8 per cent in lengths greater than 500 ft.

"Curvature—Non-mountainous areas, maximum of 6 deg.; mountainous areas, maximum of 14 deg.

"Vertical clearance—Minimum of 14 ft.

"Sight Distance—Non-mountainous areas, minimum of 1000 ft.; mountainous areas, minimum of 650 ft.

". . . Today mobility, speed, and fire power are of paramount importance. Adequate roads will increase mobility and enable a commander to concentrate his fire-power with greater speed. Our Army is small in number, almost insignificant, in comparison with the masses of troops assembled by other World Powers. There is all the more reason, therefore, that our highways and other means of transportation should be adequate to permit swift concentration, at maximum strength, at any points that may be threatened."

Requirements of the War Department for roads run all through the Federal Highways Act as one of the primary motives of construction, expansion and improvement of the country's highway system.

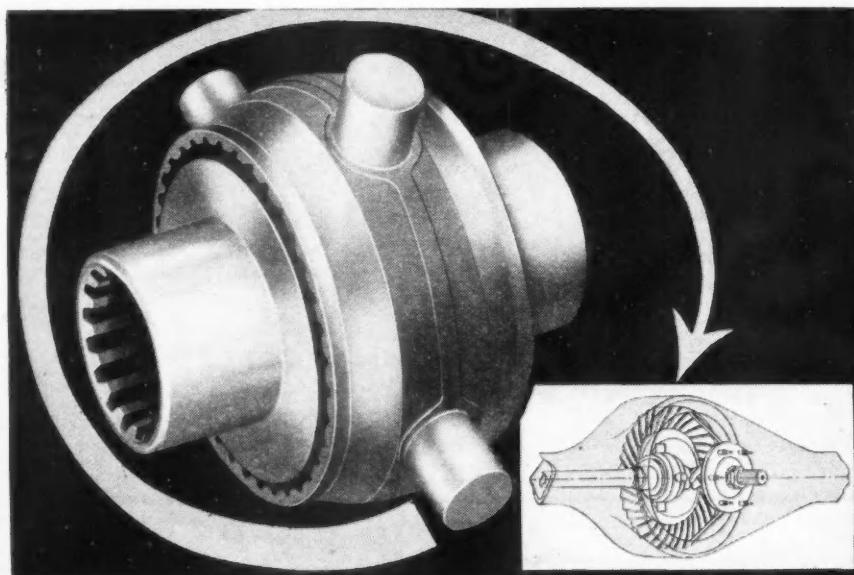
If we could stretch our imagination far and assume that these highways were not needed for educational, commercial and recreational purposes, we would definitely want these roads, and have to have them, in the interest of National Defense.

Roads and bridges built strong enough for military use, and also to withstand the ravages of fluctuating climatic conditions so that they will be in service at all times, are more than adequate for the day-in-and-day-out users of the highways—the passenger car, motor bus and motor truck.

Roads are a national public institution.

They would have to be built and financed out of public funds entirely if it were not for the fact that those who use them in advancing our social and economic progress, day in and day out, pay for them.

They provide John Q. Public with three million miles of security!



STOP WHEEL SPINNING! ... STOP GETTING STUCK!

by using
THORNTON AUTOMATIC LOCKING DIFFERENTIAL

ONE FLEET OPERATOR who has been using THORNTON Automatic Locking DIFFERENTIALS in his trucks for more than a year, writes:

" . . . Wish to state that these trucks with your Automatic Locking Differential will go places and do things they could never do before. . . . The road service on the country truck has been cut in half, due to the fact that we don't have to send a towing unit to get it out of sand, mud or snow. It can operate under its own power at all times, regardless of traction.

"We have noted a decided saving in gas consumption . . . and about 10 to 15 percent saving on tires, due to the elimination of slippage. . . . "

Write for Full Particulars

Provides TRACTION, SAFETY and ECONOMY for TRUCKS, BUSES and TRACTORS

Manufacturers of
the THORNTON
Four - Rear - Wheel
DRIVE for Trucks.

THORNTON TANDEM COMPANY
DETROIT, MICHIGAN, U. S. A.

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COMMERCIAL CAR JOURNAL
NOVEMBER, 1939



Fleet engines
deserve the best

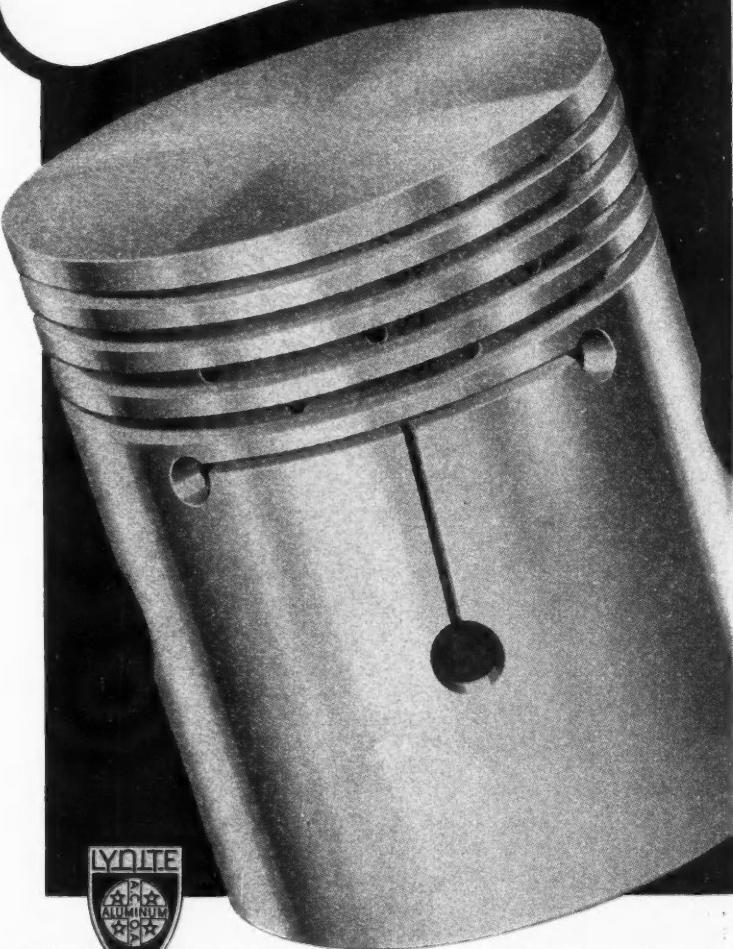
An engine starts losing power; it is wasteful of fuel and oil. You yank it out of service, re bore the cylinders and install new pistons to fit.

With Lynite T-Slot LO-EX Pistons, the engine performs like new; stays on the job longer. You get more economical operation.

The lighter weight of Lynite T-Slot LO-EX Pistons reduces bearing pressures; bearings last longer. They have low coefficient of expansion, permit close clearances, provide maximum heat flow. ALUMINUM COMPANY OF AMERICA, 1916 Gulf Building, Pittsburgh, Penna.

© REG. U. S. PAT. OFF. ALUMINUM COMPANY OF AMERICA

REPLACE WITH
LYNITE^{*} T-SLOT
LO-EX
REG. U. S. PAT. OFF.
PISTONS



LYNITE LO-EX PISTONS — A PRODUCT OF
ALCOA · ALUMINUM
CAST ONLY BY ALUMINUM COMPANY OF AMERICA

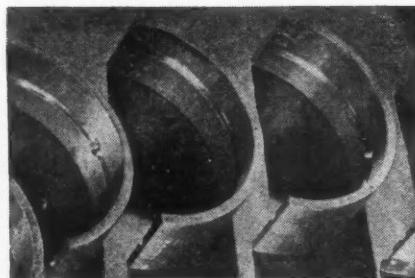
REPLACEMENT PARTS

All Aluminum Bearing

Development of a new aluminum-alloy automotive bearing with a long life, simple construction and high fatigue strength has been announced by Aluminum Co. of America. Applications include main, connecting-rod and camshaft bearings. On the basis of extensive tests now completed, engineers list the advantages of the new product as follows:

1. High fatigue strength.
2. High resistance to corrosion by breakdown products of lubricating oils.
3. Economical construction.

As to the factor of fatigue resistance, it is stated that an all-aluminum bearing, in



a fatigue-testing machine, after 100 hours was still in perfect condition.

The aluminum bearings were also found in tests to be satisfactory as far as friction is concerned. They did not score or lock to the shaft at the surface speeds met with in commercial vehicle engines. These bearing materials were developed by tests in a "scoring" machine.

Use of the bearings is at present limited to engines for commercial vehicles which have hardened shafts and which operate at relatively lower speeds at the bearing surface than is usual in passenger-car engines. However, experiments are now under way to adapt the new bearing to passenger-car engines.

Since the same types of engines may be used in buses, trucks or tractors, the aluminum bearing is suitable for these vehicles. It may be used on either gasoline engines or diesels.

Auto-Lite Sealed Beam Unit

Electric Auto Light Co., Toledo, has announced that it is manufacturing a sealed beam headlight unit available for both original equipment and replacement use. Full details of the new type light, found on most 1940 cars and some trucks was given in the September issue.

Exide XH Batteries

A new line of heavy-duty XH-type Exide batteries for commercial service has been

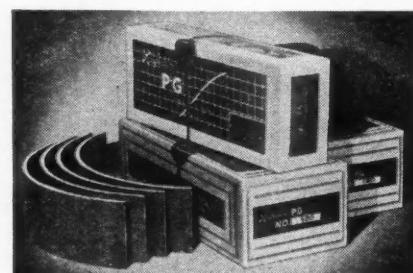
announced by Electric Storage Battery Co., Philadelphia, Pa. Available in 13, 15, 17 and 19 plate sizes, the new batteries have



higher and thicker plates, yet cases are slightly lower in overall height. Exide's "no-over-flo" device is optional equipment.

New "PG" Sets By Raybestos

A special and complete line of Raybestos P. G. (Proving Ground) Brake Lining Sets for popular light trucks is announced by Raybestos Division, Raybestos-Manhattan, Inc., Bridgeport, Conn. The new sets are drilled and countersunk, ready for quick and accurate relining of all Ford, Chevrolet



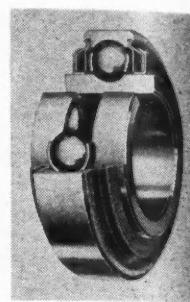
and light International trucks, back to 1931. Boxed and factory sealed in sets; a great convenience for fleet operators who do their own relining.

New Bearings by Link-Belt

A new line of Link-Belt Shafer radial-thrust roller bearings designed for front wheel, rear axle, and differential bearing replacements will shortly be made available by the Link-Belt Co., Indianapolis, Ind. The roller and raceway shapes and the angular position of the concave rollers operating between convex raceways give the bearings a capacity for any combination of radial-thrust loads. The integral perfect alignment assures free-rolling action with unimpaired load-carrying capacity in spite of a possible shaft deflection.

New Fafnir Bearing Seal

A new seal design for ball bearings, known as "Mechani-Seal," has been recently announced by the Fafnir Bearing Co., New Britain, Conn. The new seal is an integral part of the bearing itself, consisting of two steel plate shields, widely separated to form a trap, serving as the innermost members, and both being attached to the outer bearing ring. Another steel plate, pressed on the bearing inner ring, acts as a slinger when this inner ring is rotating. The new design is obtainable at present in a number of different variations—single seal, double seal or seal and shield combinations on either the Fafnir radial or wide inner-ring bearings.



Gatke Brake Blocks

The Gatke Corp., 228 N. LaSalle St., Chicago, has announced that tapered Gatke Brake Blocks, in use for many years industrially, are now available for automotive



service. The blocks are furnished in molded sets to fit the various brakes on which tapered blocks are standard equipment.

Globe-Union "Stop-Spill"

A new "Stop-Spill" vent said to effectively prevent overfilling has been incorporated on all under-hood batteries, and is manufactured by Globe-Union, Inc., Mil-



waukee, Wis. As shown in the cross-section illustration, a flat, lead ring does all the work. Descriptive material on this new type of safety vent may be obtained from the manufacturers.

(TURN TO PAGE 134, PLEASE)

GASOLINE SAVING EQUIVALENT TO 2¢ PER GALLON...

• "IT WAS just like taking 2¢ per gallon from the price of gasoline," reports the engineer. Alike, except that when this saving was made by the Standard Automotive Engineer through improved engine performance it meant that this customer still had the advantage of using a high quality gasoline. His trucks still had full power on the road. He was sure of a further saving in maintenance that is certain to follow when equipment is kept operating at peak efficiency.

One of the modern trucks operated by this customer, the National Furniture Manufactur-

ing Company of Evansville, Indiana, is shown above with the Standard Automotive Engineer preparing to make a road test. This test is an important part of the service these Engineers render. It provides a check on engine performance under actual operating conditions, complete insurance against sacrificing power for gasoline savings.

You can reach one of these Engineers through your local Standard Oil (Indiana) office or by writing 910 South Michigan Avenue, Chicago, Illinois.

Copr. 1939, Standard Oil Co. (Ind.)



STANDARD OIL COMPANY (INDIANA)
AUTOMOTIVE ENGINEERING SERVICE

LOWERS
MILEAGE
COSTS

REPLACEMENT PARTS

(CONTINUED FROM PAGE 132)

Elastic Stop Nuts

In addition to its standard line of self-locking nuts, Elastic Stop Nut Corp. of 1015 Newark Ave., Elizabeth, N. J., now offers these nuts on order in any metal and in any combination of style, size, and thread system. Elastic Stop Nuts feature a resilient non-metallic collar which takes up thread play, said to hold the nut in position regardless of vibration. A catalog explaining the principle of the Elastic Stop



and listing the standard sizes will be sent upon request to the manufacturer.

The WINNING Combination!



With Haskelite Panels you can take full advantage of the eye-appeal and efficiency of ultra-modern body design. At the same time you add months of maintenance-free service and an extra margin of strength while cutting down on useless dead weight. This winning combination is well exemplified in the ice cream delivery unit shown here.

With Haskelite PLYMETL (metal-clad plywood panels) on the sides and roof, you get construction that can easily support the extra weight of hold-over refrigerating plates without added reinforcing members, and you get the valuable, added insulating efficiency of wood. With Haskelite PHEMALOID you get single-unit, dust-tight, light weight floor construction.

Whether the requirements call for a light delivery body like this or a transport unit to carry 40,000 pounds, let Haskelite Panels point your way to better, finer bodies. Call on Haskelite for engineering cooperation on your next body job.

HASKELITE
HASKELITE MANUFACTURING CORPORATION
208 West Washington Boulevard Chicago, Illinois
Offices in Detroit, New York, Los Angeles

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GE to Make Sealed Beam

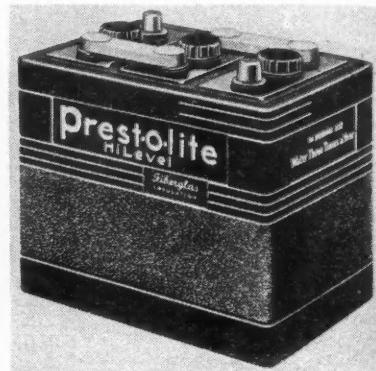
The General Electric Co. has announced that it will offer Sealed Beam Headlight units as part of its regular line of electrical equipment.

Thermodized Fan Belts

A new process which permits pre-stretching of fan belt cords to an unusual degree has been developed by Thermoid Co., Trenton, N. J. To demonstrate results of the process, known as Thermodizing, a standard passenger car belt recently supported a weight of 1500 lb. and was then reinstalled in the car where it functioned perfectly. The cords are floated in gum rubber and outside coverings are said to be unusually strong. All truck sizes are available.

Heavy-Duty Prest-O-Lites

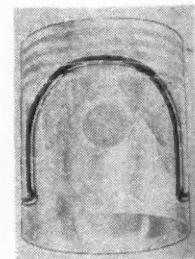
Prest-O-Lite Battery Co. has a new line of heavy-duty batteries for truck use which features both Fiberglas insulation and high-level filling. In normal service these batteries need attention but three times a



year. Fiberglas protector mats, Port Orford cedar separators, extra thick plates, one-piece containers. Now available at special Prest-O-Lite silver anniversary prices.

Hastings "U" Expander

A new piston expander designed especially for cam-ground "U" slot pistons has been announced by the Hastings Mfg. Co., Hastings, Mich. These expanders provide spring tension which is said to restore effectively cam-ground pistons to their proper shape. A special jig is available for drilling holes in the piston skirt into which the two ends of the "U" shaped expander fit, insuring positive locking against movement or disengagement.



Trippe Bulb Line

The Trippe Mfg. Co., 564 W. Adams St., Chicago, has introduced a complete line of automobile and truck bulbs. The bulbs are guaranteed in passenger car use against failure (except accidental) for 60 days. Truck service not guaranteed.

COMMERCIAL CAR JOURNAL
NOVEMBER 1939



This Man TO MOST PEOPLE IS A TRUCK DRIVER

. . . but to us, he and the thousands like him, are an important part of our engineering department.

For years we have leaned strongly on the truck drivers of America for help in the designing of our product — realizing always that these men KNOW Trailers as no one else does. Theirs is a first-hand experience — they DRIVE THEM!

Once more we are coming to these men — these Fruehauf "engineers" — for assistance. We want to be sure we know WHY drivers fight to pull our Trailers, we want to know how Fruehauf Trailers can be still further improved, we want their story on

Differential Dual Wheels, we want to be sure our nation-wide service set-up is doing the job it should.

A total of \$1,000.00 in cash will be paid for this assistance. Make sure your drivers know about it — write for complete details or inquire at any Fruehauf Branch.

And, the next time you consider Trailers — after sales presentations and printed claims have all been analyzed — ask your drivers what make they would buy. They know!

World's Oldest and Largest Manufacturers of Truck-Trailers
FRUEHAUF TRAILER COMPANY • DETROIT
Sales and Service In Principal Cities

\$1,000.00
IN CASH
FOR DRIVERS

A TOTAL OF \$1000.00 IN CASH WILL BE PAID FOR THE BEST LETTERS ON THESE SUBJECTS:

1. "Why I Like to Pull a Fruehauf Semi-Trailer"
2. "Improvements I Would Make in Fruehauf Semi-Trailers"
3. "How Fruehauf's Nation-wide Service Facilities Helped Me"
4. "Why I Think Every Trailer Should Have Differential Dual Wheels"

Write for complete details or inquire at any Fruehauf Branch

FRUEHAUF TRAILERS

MORE FRUEHAUF TRAILERS ON THE ROAD THAN ANY OTHER MAKE

IF IT'S A TRANSPORTATION PROBLEM — CONSULT A MOTOR CARRIER

COMMERCIAL CAR JOURNAL
NOVEMBER, 1939

When writing to advertisers please mention Commercial Car Journal



"Engineered
Transportation"

REG. U. S. PAT. OFF.

BODIES AND MATERIALS

(CONTINUED FROM PAGE 55)

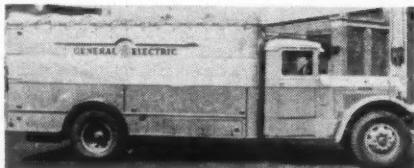
simplified body-building program.

Another current announcement outlines the use of stainless steel in .0095 in. sheets backed by a mineral material which can be cut to fit with shears, installed very easily and welded or soldered at the seams.

Some of the newer paints are either easier to apply or fleet operators think they are because more fleet operators are painting their own equipment to their own standards in order to preserve the advertising value of their color scheme. Hardware continues to improve with each year and, together with roll-up doors, replacing rear doors and tailgates, adds to the appearance and efficiency of truck bodies.

Ludlite Stainless Sheets

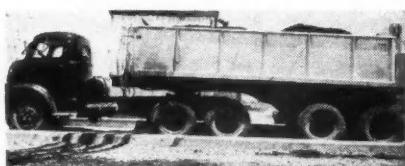
The Allegheny Ludlum Steel Corp., through its Ludlite division, Watervliet, N. Y., has introduced a new body covering material called Ludlite. It consists essentially of sheets of stainless steel .0095 in. thick applied to a mineral backing material. The backing material consists of asbestos fibers, volcanic clay, portland cement and calcined magnesite. Its rate of expansion



in any temperature encountered is about the same as that of stainless steel so there will be no trouble with buckling of sheets or breaking of the bond.

It can be washed as easily as porcelain, an important advantage in food carrying trucks, and the sheets can be cut to size

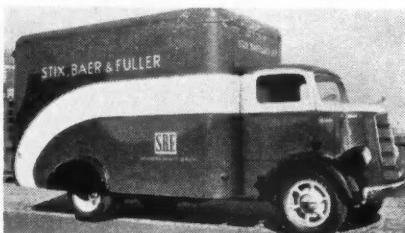
with a saw and easily installed. The seams may be soldered or welded. It is said that it provides a weight advantage. It is of course, not necessary to paint a body covered with this material although paints have been developed to make it possible if desired.



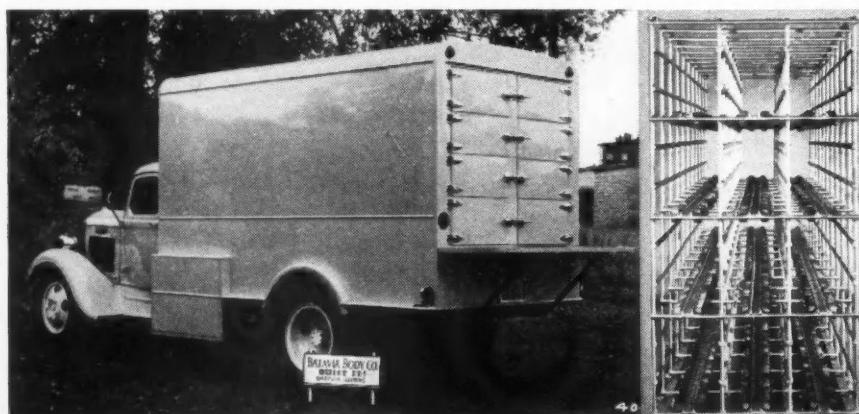
This is a Ford-Warford dual-axle-drive multi-wheeler, 95 H. P. Ford Motor, 34 x 7 ten-ply tires all around, Trailmobile trailer with 34 x 7 ten-ply tires, wood telescopic hoist, body 17 ft. long, 15 cu. yd. capacity, 60,000 lb. gross load, bare truck and trailer 18,830 lb.



Met-L-wood is the chief ingredient of this body. Besides having low weight with great strength features and shakeproof construction, this body has full-width door openings achieved by making the vertical corners integral with the doors.



This furniture van was built by McCabe-Powers Auto Body Co. It is 14 ft. long, 68 in. wide inside and 7 ft. 2 in. high inside. The rear of the body is equipped with a tailgate having a continuous built-in hinge. A waterproof curtain of the roll-up type is provided about the tailgate. The colors are two shades of green with a cream belt.



Baker Announces New Models

Greater strength and improved plow lifts feature new models of Baker "V" type



Snow Plows made by the Baker Mfg. Co., Springfield, Ill. Improvements have also been made in the many models of Baker blade-type snow plows both one-way and reversible-blade with the sectional, tripping blades. The complete line of Baker models are described in the new 36-page Bulletin 816 which may be obtained upon written request to the manufacturer.

Good Roads Sand Spreader

The problem of combating sleet and ice has been made the subject of a real study by the Good Roads Machinery Corp., Kennett Square, Pa. The result is a machine designed expressly for the purpose of spreading sand, salt or cinders on icy highways or slippery intersections.

Many new features have been incorporated in this new design such as a huge



six cu. yd. bin, a conveyor shaft and worm of cast steel, a paddle-type spreader capable of spreading a width up to 40 ft. The conveyor and paddle operate directly from a four-cylinder gasoline engine which is mounted on the side of the spreader.

Du Pont Upholstery

Many new trucks will be upholstered with a chemically-developed material made by du Pont and prepared especially for heavy-duty service. It consists of a rubber coating composition applied on a heavy cotton base. This coating is composed of a fibrous structure made of fine leather and rubber combined.

Pictures at left show a unique type of body recently manufactured by the Batavia Body Co. and used for the distribution of packaged ice in and around Indianapolis. Regular ice is cut and wrapped in 25-lb. units. These packages are wholesaled to neighborhood outlets through automatic ice vending machines using a coin slot type principle. In order to meet the requirements, conveyors were provided in the body leading the packages to a series of rear doors through which they would be removed by the operator for distribution. Each conveyor has a capacity of 120 25-lb. packages. Refrigeration is accomplished by means of three hold-over plates which are in turn refrigerated by means of an electric driven methyl chloride truck-type compressor mounted on the body and connected to a 220-volt plug-in outlet.

Convertible Snow Plow

The Bucyrus-Erie Co., South Milwaukee, Wis., announces a new piece of equipment which converts its "Bullgrader" or "Bulldozer" into a heavy-duty snow plow by changing only the blade and frame.

The snow plow is a V-type with full hydraulic control and wings adjustable from the cab. It is mounted on the same T-40 International TracTracTor as the "Bullgrader" and "Bulldozer" and uses the same hydraulic system, the same control valve and the same attaching parts. The plow will fit either standard or wide-gage tractor with any width track shoe available, and is claimed to be capable of handling any snow.



The Kraft-Phoenix body was built by the American Body and Equipment Co. It is of semi-steel construction having steel inner and outer shell and oak spacer pillars, floor and roof rails. There are 4 in. of insulation and a plug-in refrigeration unit.



This beer delivery unit is inclosed, insulated, and streamlined for advertising appeal without sacrificing any pay load. It will carry 74 half barrels of beer on easily-maneuvered 140-in. w.b. c.o.c. chassis. The body was built by Badger Trailer and Body Corp. and designed by Brooks Stevens.



**Hansen Lock
and Hinge**

Announcement is made by the A. L. Hansen Mfg. Co., Chicago, of a new type of square-corner hinge and a three-point slam-and-take-up lock. The hinge permits doors to swing wide open flush with side of body, out of the way of traffic and with loading space entirely free. The lock adds solidity to doors at center where there is a mechanism and a wide striker bolt. Lock is made especially for heavier types of doors.

(Turn to Next Page, Please)

This Year Get MCKAYS!

*Get this Pair of Aces
with MCKAYS!*

Beat down the high cost of "Old Man Winter"—get these *double-value* truck chains. Get LONGEST WEAR and QUICKEST FASTENER—combined! McKay Multi-Grip—"mileage champion" of them all—will give you the *lowest traction cost per mile*.

Largest fleets know this. That's why so many of 'em pick MCKAYS. Arrange with your nearest McKay Jobber NOW for prompt deliveries of long-wearing Regulars or Multi-Grip. For Jobber's name, write or wire . . .

**THE MCKAY COMPANY, PITTSBURGH, PA.
Sales Offices: York, Pa.**

MCKAY TRUCK CHAINS <JOBBERS EVERYWHERE>

ENSIGN

**ENSIGN BUTANE-PROPANE
CARBURETION EQUIPMENT
IS AVAILABLE FOR ALL
MAKES OF TRUCKS.**

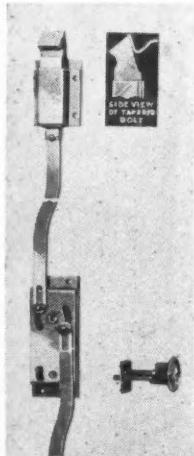
**BUTANE-PROPANE
CARBURETION
IN THE TRUCKING
INDUSTRY**



MACK MODEL EFU used
for delivery of Butane

ENSIGN

**CARBURETOR CO., LTD.
LOS ANGELES • DALLAS • CHICAGO**



Eberhard Door Lock

The Eberhard Mfg. Co. has an entirely new design Slam-tite panel-body door lock. The latch retains all of the features of the older design and is adapted for use on heavier doors now being built into panel body jobs. With a Corbin lock and finger latch as shown the latch is designated No. 5606.

Root Road Scraper

Featuring an adjustable spring cushion and a full height moldboard, a new Root Model F-3 Road Scraper has been announced by the Root Spring Scraper Co., Kalamazoo, Mich. On regular speed maintenance of gravel highways, the easy adjustment of the cushion provides for the various spring tensions required by different types of road surfaces. In planing and leveling road surfaces, the spring cushion is blocked so that the blade is held rigid in any position, offering perfect planing action. As the wheels drop in any low place on the road surface, the high spots are removed. The springs may be locked for removal of ice and snow.

CLASSIFIED ADVERTISEMENT

Wanted. Motor carrier right of way from and to the metropolitan district of New York City and the New England territory.

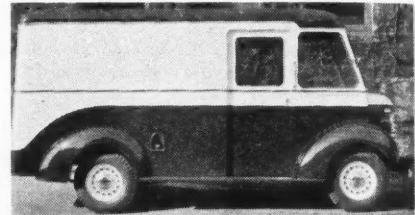
No equipment desired. Please address all replies to C. R. Iden, Builders Exchange Building, Akron, Ohio.

Young Hydraulic Endgate

Hydraulically-powered from the truck engine, the "Modern Truck Loader" elevating endgate, manufactured by the Young Iron Works, Seattle, Wash., will raise or lower loads between bed and ground level, or any level desired, with a single lever controlling all operations. It stops automatically at bed or ground level, and when not in use, can be swung up or down as any conventional gate. Mounted directly on the chassis, independent of any fastenings to the body, it is readily adaptable to any make of truck.

Monarch Issues Bulletin

The 1940 Monarch line of road maintainers for under-truck mounting has been announced by the Monarch Road Machinery Co., Grand Rapids, Mich. Models are offered in 8, 9, 10, 12, and 14-ft. blade lengths, and may be attached to any truck. The Monarch grader is also available with full automatic hydraulic power control from the truck cab.



This body made by the Luce Mfg. Co. is composed of kiln-dried oak and stretcher level auto body sheet steel. Trim is aluminum moldings. Safety glass is used throughout and the hinges are 14-gage steel piano-type. Door and grab handles are chrome plated.



The Eberhard Mfg. Co. has a new swivel-seat pedestal for use on multi-stop trucks. It is known as No. 575716. It has a complete swiveling action and it automatically locks in the driving position. It is adjustable both for height and forward and back directions.

Webster-izing

THE HIGHEST QUALITY OF RETREADING—RECAPPING

When writing to advertisers please mention Commercial Car Journal

A FEW WEBSTERIZING AGENCIES	
TRAVERS & GROSS	New Castle, Pa.
ASHEVILLE RETREADING CO.	Asheville, N. C.
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WILSON & GREYNOLDS SERVICE	Loyall, Ky.
GRAHAM & EVANS	Cedar Rapids, Ia.
HECKFOSSAL TIRE CO.	Belleville, Ill.
CAHILL'S STANDARD SERVICE	Terre Haute, Ind.
TIRE ENGINEERS	Waterloo, Ia.
LAUDERDALE RECAPPING CO.	Fort Lauderdale, Fla.
R & W TIRE CO.	New Britain, Conn.

Write for the one nearest you!

WEBSTER RUBBER COMPANY, WARREN, OHIO

SHOP EQUIPMENT

(CONTINUED FROM PAGE 60)

New Allen Voltmeter

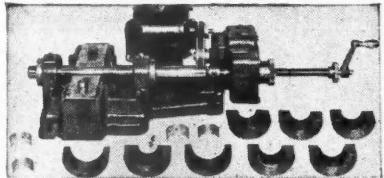
Featuring a D'Arsonval moving coil and a push-button control for shifting scales, the new Allen F-8 voltmeter, manufactured by the Allen Electric and Equipment Co., Kalamazoo, Mich., is offered as an all-pur-



pose instrument for checking batteries, wiring and voltage leaks. The etched metal dial is calibrated with both a 0-3 volt scale in tenths and a 0-15 volt scale in two-tenths. Complete with prods, leads and clips.

Insert Boring Machines

Two machines especially designed to accurately size off-standard bearing inserts have been announced by Lempco Products, Inc., Bedford, Ohio. One is a portable light-weight, hand-operated job; the other



power driven by a 1/4-hp. motor. With these machines in the shop, the manufacturer points out, it is only necessary to stock one under-size insert which can be bored to any size desired.

Econ-O-Can Cuts Paint Cost



The Master C-3 Econ-O-Can Syphon Feed Cover, manufactured by the Burning Brand Co., Chicago, makes it possible to keep different colors in the original cans in paint spraying operations. The cover is designed to fit a standard quart-size friction top paint can and has a locking device that insures full syphon action.

(TURN TO NEXT PAGE, PLEASE)

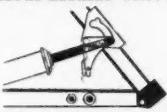
ANTHONY HYDRAULIC LINE OF LOW LOADING HEIGHT "OK" HOISTS

5 to 30 ton

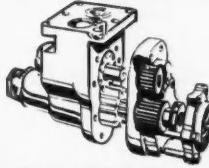
FOR ANY MAKE, MODE
OR W. B. CHASSIS



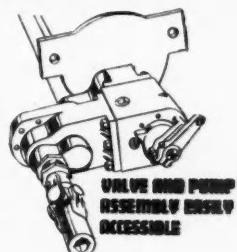
DOUBLE CAM ARM LIFT
FIRST 25 DEGREES—FOR POWER



DIRECT LIFT SWINGING PRATICALLY
LAST 25 DEGREES—FOR SPEED



ANTHONY REVERSIBLE FLOATING
GEAR HUB-THRUST PUMP



VALVE AND PUMP
ASSEMBLY EASILY
ACCESIBLE

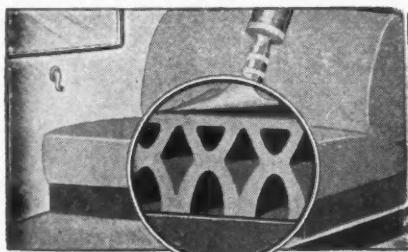


NOTE: HOIST NUMBERS INDICATE CYLINDER SIZE AND STROKE
NOTE: THE SHORTER THE BODY—THE GREATER THE HOIST CAPACITY

IN COMBINATION WITH THIS GREAT LINE OF
ANTHONY HYDRAULIC HOISTS
GOES A MOST COMPLETE LINE OF
ANTHONY ALL STEEL BODIES
IN MODELS AND CAPACITIES TO MEET YOUR PARTICULAR NEED.

ANTHONY CO., STREATOR, ILLINOIS . . .

**ECONOMIZE
with Black Diamond All-Rubber
SEAT CUSHIONS**

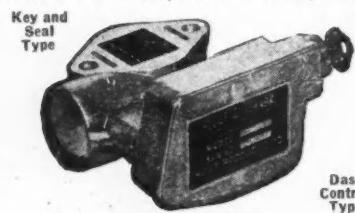


Increase the life of your truck cushions—decrease their upkeep expense by equipping with Black Diamond all-rubber seat cushions and back rests. They wear forever and will never let you down. Savings begin with their low first cost. Then you save by eliminating month-after-month upkeep costs. With the exclusive diamond grid construction, these cushions lead in comfort—in economy and durability. But first, get the facts that will convince you that, regardless of the job to be done, you should always install Black Diamonds. Made in every size to meet any requirement.

KARPEX MANUFACTURING CO.
1924 E. 19th Street, Indianapolis, Ind.

HOOF GOVERNORS

Low Maintenance — Tamper Proof — Full Engine Power



Hoof Products Company
Dept. BEC, 6543 S. Laramie St. Chicago

The Signal that gives greatest visibility.

CONNECTICUT DIRECTIONAL SAFETY SIGNALS



★ **IMPACT!** ★
—and those tough lug nuts are off, quick and clean with the two piece
JARI SHOCK WRENCH

Changing big truck and bus wheels now a ONE MAN job. A faster, better, easier job. No lengths of pipe; no hammering. It's the SWING that does it—handle turns free through 120°, then engages with a sledge-hammer blow.

This 17 lb. wrench actually develops 40,000 lbs. torque registered by impact torque measuring machine.

Many prominent users. Write for catalog sheet and prices.

JARI PRODUCTS, INC., 2948 Pleasant Avenue, Minneapolis, Minn.

(CONTINUED FROM PRECEDING PAGE)

Brake Shoe Grinder

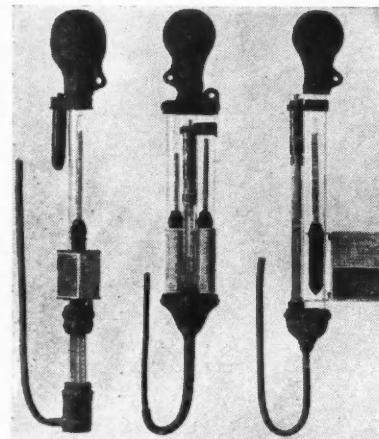
A new model portable brake shoe grinder is offered by Shepard-Thomason Co., 2023 West Gage Ave., Los Angeles. A universal mounting is provided for axle or steering spindle. The device accommodates



diameters from 10 to 26 in. and widths up to 12 in. It has an inside micrometer for measuring the drum and a means of interlocking the micrometer with the grinder.

Edelmann Tester

E. Edelmann & Co., Chicago, has introduced three new anti-freeze testers featuring built-in flashlights for night work,



thermometers housed in separate glass jars, built-in rubber hangers, "flexible" type precision floats and controlled-capacity bulbs.

**AUTOPULSE
ELECTRIC FUEL PUMP**

- Uninterrupted Schedules
- Instant Starting
- Greater Economy
- No Vapor Lock
- Added Protection

AUTOPULSE CORP., DETROIT



MICH

Introducing

**THE
GAS
MASTER**



GAS MASTER is a four inlet, one outlet gasoline control valve for transport trucks equipped with several supply tanks. Allows operator to control gasoline supply to engine at all times. Mounts on dash panel. Built entirely of brass. Perfectly machined and timed. Guaranteed for life of truck. Easy to operate. Simple to install.

**Manufactured and Sold by
HIGHWAY EQUIPMENT, INC.
Oak and Harrison Sts. Michigan City, Ind.**

Handy
BATTERY CHARGERS

**LOW COST
BATTERY CHARGING**

Write for free Bulletin 68 telling about the New HANDY Battery Chargers and Testers. Or, ask your Supply House.

BALDOR ELEC. CO.
4340 Duncan Ave., ST. LOUIS, MO.



**ELIMINATE
RUN-DOWN
BATTERIES**



for low-cost battery mileage. Now, it is simple and inexpensive to keep batteries at efficient charge to prolong battery life. The Valley Guaranteed (two years) Charger connects to lighting circuit—is easy and economical to operate—no moving parts. Write for FREE bulletin, today.

Model G-12 charges 1 to 12 6-volt batteries. NOW ONLY Other sizes at equally low \$25.00 prices.

Valley Electric Corp.

4221 Forest Park Blvd. • St. Louis, Mo.

WHY CHANGE OIL?

WHEN "OIL DOES NOT WEAR OUT"

U. S. BUREAU OF STANDARDS
Car, Truck, Tractor Owners—Stop wasting your money on needless oil changes! Keep oil clean and "oily" indefinitely. Our FREE booklet "Oil Facts" a revelation. Ask your dealer for a copy, or write to:

RECLAIMO MFG. COMPANY
2306 N. WESTERN AVE., DEPT. 20, CHICAGO, ILL.

Precision-built
AUTOCAR
TRUCKS

SHORT-WHEELBASE
OR CONVENTIONAL
GASOLINE OR
DIESEL
IN ALL
CAPACITIES

ARDMORE, PA., AND LEADING CITIES



FUEL and MAINTENANCE ECONOMY
Through
ENGINE CONDITIONING
by
CONTROLLED OXIDATION

Oxylator Company
Grand Rapids, Michigan

FRINK
JNØ-PLOWS

Both "V" TYPE and
ONE WAY BLADE TYPE
hand or power hydraulic control
FOR ALL MOTOR TRUCKS
FROM 1½ TO 10 TONS

Note for catalog 38AC and 38BC with discount to truck dealers.
CARL H. FRINK, Mfr., CLAYTON, 1000 Isl., N. Y.
DAVENPORT-BESLER CORP., DAVENPORT, IOWA
FRINK SNO-PLOWS OF CAN. Ltd., TORONTO, ONT.

**GENERAL
OIL FILTER**

- Saves Oil and Reduces Upkeep.
- Easy to install.
- Low initial cost.
- Low cost, quick changeable, sealed armored cartridge.

SPECIAL FLEET OWNERS PRICES
GENERAL FILTERS, INC.
DETROIT



Teleoptic

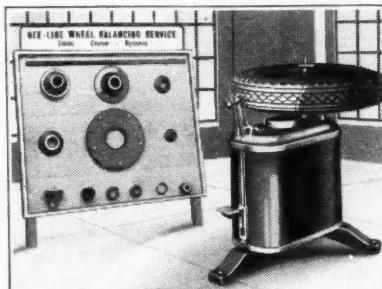
THE CORRECT TURN SIGNAL FOR EVERY TYPE OF VEHICLE!

You will find in Teleoptic Signals unexcelled service. Write for details about the Teleoptic for heavy-duty trucks.

THE TELEOPTIC CO.
RACINE, WIS.

Bee-Line Wheel Balancer

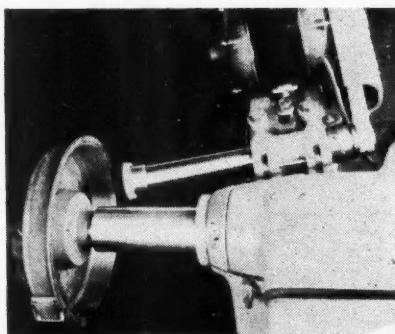
The Bee-Line Co., Davenport, Iowa, has announced a new Wheel Balancer. Pleasing in exterior lines, it features a friction clutch that freezes and locks at any speed,



a balance meter, a locating device for correct application of weight and a floating pivot operating statically, centrifugally and dynamically.

Van Norman Adds Grinder

A new grinding attachment has been made available for the No. 202 Brake Drum Lathe manufactured by the Van Norman Machine Tool Co., Springfield,



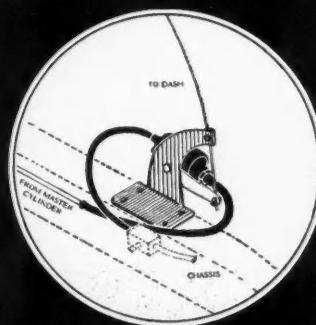
Mass. The new grinder, powered by a ½ h.p. constant-speed motor, is designed to handle all drums up to 7 in. width.

"Fifth Wheel" Creeper

An interesting creeper, featuring a patented "fifth wheel" construction, is offered by J. H. Heckman, 5619 Milmore Ave., Chicago. Two of its four ball-bearing straight-running wheels are placed near the center of the creeper. When a turn is desired it is only necessary to shift the weight from the fixed wheels at one end to the pivoted fifth wheel at the other end.

(TURN TO NEXT PAGE, PLEASE)

Reduce
JACKKNIFING
on
ICY PAVEMENTS
with
BRAKE CHECK



PATENT PENDING

DISCONNECT YOUR FRONT BRAKES FROM THE DASH

Every driver knows the vehicle is out of control and subject to dangerous jackknifing when the front wheels are sliding.

Install BRAKE CHECK, the front brake control which allows the driver to instantly cut off the front wheel brakes, from the dash, when on slippery or icy pavements.

Pushing in the dash control instantly returns the front brakes to normal operation.

Thousands of miles of operation in many of the largest fleets have proven BRAKE CHECK 100% efficient and satisfactory.

HOW IT OPERATES

A simple ball valve is attached to the frame. Flexible tubing is cut into the T or cross fitting so that the brake fluid is directed through the valve and back into the line. A control wire to the dash tips the valve, dropping the ball into the seat, cutting the pressure to the front brakes.

A unit can be supplied for any hydraulic job. Installation is simple and the unit is guaranteed not to leak or get out of order. Liberal discounts on quantity orders. List price \$10.00.

See your brake jobber today or, if he cannot supply you, write direct.

There is still some territory open for high class jobbers and good agents. Act now.

Ask the Driver—He Knows

BRAKE CHECK SALES CO.
NOT INCORPORATED
7345 Harvard Avenue,
CHICAGO, ILLINOIS

CLEANER TRUCKS! LOWER COSTS!



Cut truck washing time to 15 minutes—use Wonderweld Car Wash. Self drying! No chamoising to remove water and streaks. Cleans, polishes and protects finish. Drum, gallon and pint containers. See jobber. Dime brings sample. Folder FREE!

WONDERWELD SELF DRYING Car Wash

Miller Mfg. Co., 1220 Kaighn Ave., Camden, N. J.

TRUCK ENGINEERING TRAILERS and BODIES

for all types of service

TRUCK ENGINEERING CORP.
1802 East 38th St. Cleveland, Ohio

For More Miles per Dollar —
Switch to



BOWERS

BATTERIES

BOWERS BATTERY MFG. CO., INC.

Main Plant: Reading, Pa. • Chicago Plant: Harvey, Ill.

BUY THIS GENUINE 1/2" SPEEDWAY DRILL

And get these features:

- High Torque SpeedWay Drill Motor
- Streamlined Air Cooled Die Cast Case
- Natural Grip Direct Thrust Breast Plate Handle
- Removable Side Handle for Close Quarters
- Self Aligning Oilless Bearings
- 500 R.P.M. Operating Speed
- Smooth Sliding Thumb Switch Complete with hand operated 3-jaw $\frac{1}{2}$ " chuck, rubber covered cord, unbreakable plug.
- Permanently Beautiful 2-Tone Finish

Write for Circulars and name of nearest dealer.

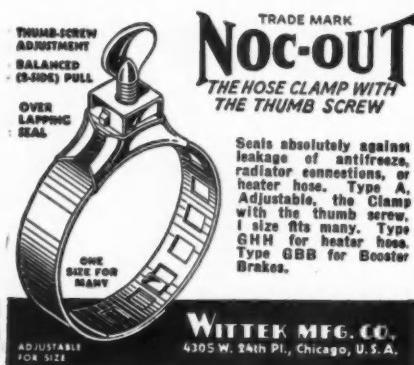
SPEEDWAY MFG. CO.
1840 S. 52nd St., Cicero, Ill.

For running-in new and rebuilt engines use auxiliary lubricants containing "dag" * Brand colloidal graphite.

Acheson Colloids Corporation

Port Huron Michigan

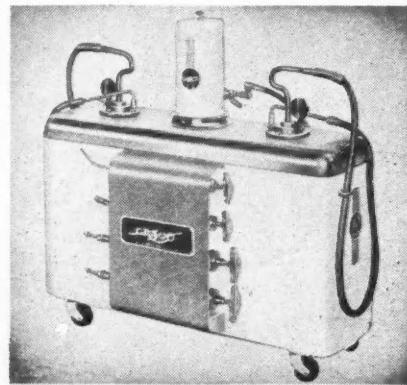
*REG. U. S. PAT. OFF.



(CONTINUED FROM PRECEDING PAGE)

Graco Porto Luber

A new portable lubricator which may be rolled about the shop from one truck to another has been announced by Gray Co., Inc., Minneapolis, Minn. Streamlined in appearance, the device contains everything

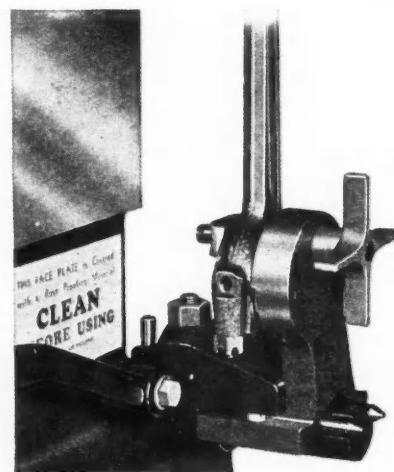


needed for a complete lubrication job. Power and hand operated guns are supplied for various type lubricants.

Sunnen Rod Fixture

A side clamping fixture for holding worn Ford V-8 rods on the Sunnen rod aligner has been introduced by the Sunnen Products Co., 7917 Manchester Ave., St. Louis.

After long use, these rods become worn inside to such an extent that it is difficult



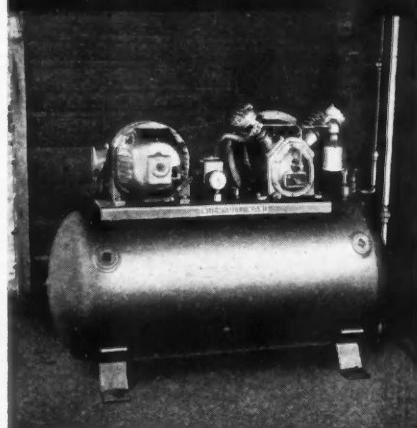
to get a true test by setting them directly on regular mandrel or arbor.

The new fixture fits the universal mandrel as shown. Because the large ends of V-8 rods have sides ground square with the bore, these are proper points from which to check the rods. The fixture is useful for any make of rod that is very narrow and has no bearing metal flange.

Lanoke Electric Tachometer

Lanagan & Hoke, Inc., 431 E. Collom St., Philadelphia, has a new Model 202-B electric tachometer. An interesting feature is a supersensitive 0-to-400 r.p.m. scale which may be set at any speed range from 500 to 2700 r.p.m. It then shows speed increases directly. Other scales read from 0 to 1000 and 0 to 4000 r.p.m.

It's a
Beauty



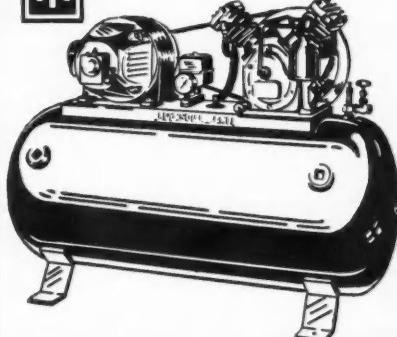
You can be proud of an Ingersoll-Rand Type 30 two-stage compressor. It is painted a flashing metallic blue-grey — and will add to the appearance of your shop or service station.

Furthermore, the beauty is more than skin deep. It will give you years of trouble-free operation with the lowest possible operating costs.

It occupies the same position of leadership in the small compressor field that large I-R compressor units have occupied in other fields for two-thirds of a century.

Sizes $\frac{1}{4}$ to 10 hp.—Ask the I-R jobber about them.

752-3



Ingersoll-Rand

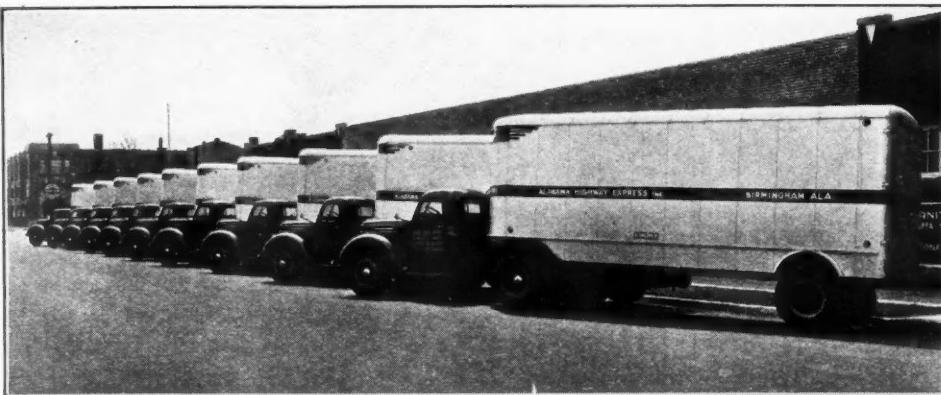
11 BROADWAY, NEW YORK, N.Y.

I-R JOBBERS EVERYWHERE

Kingham

UNIVERSAL

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For information on trailers, light weight bodies, truck bodies and winches, see your nearest Kingham distributor or write

KINGHAM TRAILER COMPANY, INC.
Louisville, Ky.

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For Better Accessory Drive Installations

Morse Morflex Couplings transmit power without noise, and dampen vibration. Morse Morflex Universal Drive Shafts provide a successful cushion drive in a shaft coupling, driving units of remote or angular location. No lubrication needed. Made by the makers of Morse Silent Timing Chains. Write for details.

MORSE CHAIN COMPANY, Detroit, Mich.
DIVISION BORG-WARNER CORPORATION

COMMERCIAL CAR JOURNAL
NOVEMBER, 1939

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REG U.S. PAT OFF.

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GUNK • The High Performance Motor Block and Chassis Degreaser

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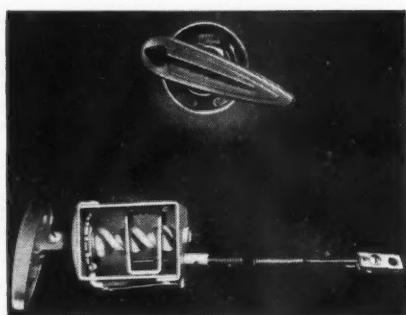
ACCESSORIES

(CONTINUED FROM PAGE 64)

Manual Shutter Control

A new manual shutter control which provides full shutter opening with but a turn of the wrist has been announced by Pines Winterfront Co., 1135 N. Cicero Ave., Chicago. Hair-line adjustment is possible throughout the entire range.

The company also has a new type of thermostat which may be mounted right in the radiator hose of most trucks for convenient automatic shutter control. Still

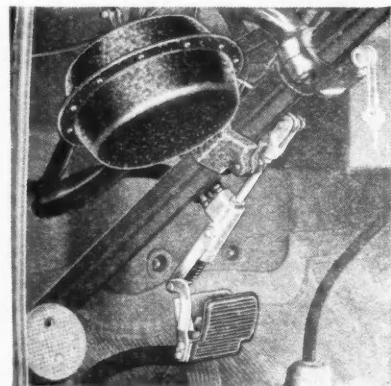


another improvement on the way is a thermostat hook-up which places the unit above the engine water line but within the water stream. Providing accurate shutter control when engine is running, the unit acts quickly when left in the air as soon as engine stops.

A limited number of experimental units are available for field testing.

Low-Cost Power Brake

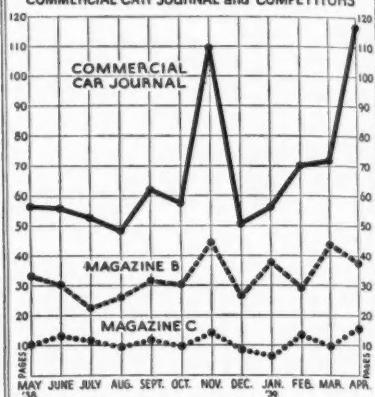
An inexpensive vacuum-powered booster brake has been announced by Booster Brake Corp., 2526 W. Congress St., Chicago. Its principal feature is the fact that the entire unit mounts on the steering



column of car or truck and operates directly on the brake pedal through a special attachment. Model 100 for passenger cars and trucks up to 1 ton is \$12.50. Model 200 for trucks up to 5 tons lists at \$18.50. There is also a similar device especially rigged for controlling the towed car in two-car driveaways. Installation requires about 15 minutes. Full details from the makers.

COMMERCIAL CAR JOURNAL

Amount of Advertising Space Used In 12 Months COMMERCIAL CAR JOURNAL and COMPETITORS



Leads in Advertising Volume

The chart, of course, tells the story of COMMERCIAL CAR JOURNAL leadership. Any publication, head and shoulders above the others in its field, has the confidence of the manufacturers in its industry—and is getting results for them.

We started making these charts in 1935. They all look about alike—with COMMERCIAL CAR JOURNAL always out in front. It is the No. 1 Truck Fleet publication, with 30,000 circulation monthly.

COMMERCIAL CAR JOURNAL

A Chilton Publication



CHESTNUT & 56TH STREETS
PHILADELPHIA, PA.

TIMKEN TAPERED ROLLER BEARINGS

THE TIMKEN ROLLER BEARING COMPANY, CANTON, OHIO

KINNEAR TRUCK DOORS Also Doors for Buildings



ALL METAL . . .

. . . Coils like a window shade, out of the way . . .

CONVENIENT BURGLAR PROOF FIRE PROOF MORE DURABLE

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Manufacturing Company
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OSHKOSH

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A proven product. 1½ to 10 ton capacity. Write for complete information.

OSHKOSH

Motor Trucks, Inc.

Oshkosh, Wis.

=St.Paul=

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HYDRAULIC HOISTS and DUMP BODIES

Manufactured for over
27 Years by

ST. PAUL HYDRAULIC HOIST COMPANY

MINNEAPOLIS, MINNESOTA
Sales & Service Everywhere

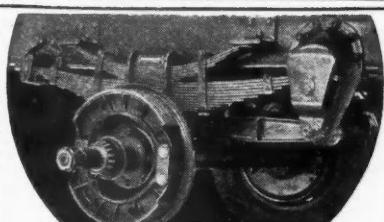
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TOOLS

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box of

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Ask for your copy Free Premium Book



GRAMM TRAILERS

"Ask the man who pulls one"

P Series Timken Power Brakes Now Standard

GRAMM TRAILER DIVISION, Delphos, O.

Tire Carrier with Winch

L. B. Nash & Bro. Co., 201 N. Wells St., Chicago, has a tire carrier which can be easily installed by bolting to the chassis frame or other body member, using two holes already located in each end lug.

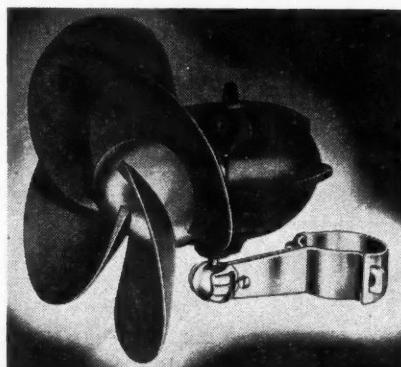
The design of the carrier entails the use of a winch and cable which makes



it possible to lower the spare onto the road for changing and raise it into place for carrying. The spare is secured rigidly for road travel. It is furnished for frames from 27 in. to 42 in. and for spares using 20 to 24-in. rims and for GMC, Budd, Chevrolet and Ford steel wheels. The carrier provides for maximum road clearance.

Rubber Defrosting Fan

The Sansom-United Corp., Rochester, N. Y., has a new 6-in. rubber fan for mounting on the steering column. It has a molded plastic shell finished in walnut



with blades to match. The blades are guaranteed for five years of normal use. This new fan has a wider range of breeze direction than previous fans. It is made in 6 and 12-volt models.

Duo-Grip Brake

A new brake design is revealed in the equipment being produced by the Detroit Duo-Grip Brake Co., Detroit. It is for application as a propeller shaft brake, designed not only for parking but for regular braking to supplement the service brake system of the vehicle. Latest development is the adaptation of the principle to a complete four-wheel brake system, actuated mechanically, hydraulically or pneumatically.

The Duo-Grip brake consists essentially of two segmental brake shoes—one contacting the inner surface of the drum, the other the outer surface—actuated by

(TURN TO PAGE 183, PLEASE)

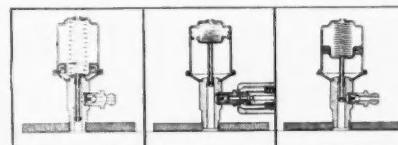
... So Bearings
CANTRUNDRY
Between Lubrications!

Insure a
**STEADY FLOW
OF GREASE**
with the
**ALEMITE
HYDRAULIC
RESERVOIR
CUP**

ACTUAL SIZE

STEERING KNUCKLES, king pins, and shackle bolts have close-fitting bearings—take extra punishment—use lubricant faster than other bearings. To keep these important bearings from danger of running dry between lubrications, many fleet owners are installing Alemite Hydraulic Reservoir Cups.

Equipped with a standard Alemite Hydraulic Fitting, these cups are lubricated at regular lubrication times. They store a quantity of grease and feed it to the bearings gradually, as needed. They can save you plenty of money in longer bearing life and avoided repair jobs. Mail the coupon today.



Hydraulic Reservoir Cup empty;
cup is filled, compressing spring.

Gun is applied; cup is filled, compressing spring.

Pressure of spring feeds grease gradually.

ALEMITE

REG. U. S. PAT. OFF.
**WORLD'S LARGEST MANUFACTURER
OF LUBRICATION PRODUCTS**
A Division of Stewart-Warner Corporation
1876 Diversey Parkway, Chicago, Ill.
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Belleville, Ontario

ALEMITE—A Division of Stewart-Warner Corporation
1876 Diversey Parkway, Chicago, Ill.

Please send full details about your new Alemite Hydraulic Reservoir Cup. Dept. K

Name.....

Address.....

City.....State.....

Firm Name.....



New rings, pistons, reboring do their part, but when worn bearings cause oil pumping, correction must start there.

Don't guess—always check the bearings and when worn, replace in sets with Federal-Mogul bearings—they are engineered for the job of oil control.

FEDERAL-MOGUL CORPORATION
DETROIT, MICHIGAN



When writing to advertisers please mention Commercial Car Journal

WORN BEARINGS *Cause* OIL PUMPING



The Federal-Mogul Bearing Oil Leak Detector is a simple, portable unit, with which any mechanic can quickly, accurately check all engine bearings and oil lines simply by dropping the oil pan. It provides a great visual demonstration of why worn bearings should be replaced for oil control. Low priced. Ask your jobber or mail coupon for complete details!

FEDERAL-MOGUL CORP.
4805 John R St., Detroit, Mich.

Send me complete details and price
of the Bearing Oil Leak Detector.

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COMMERCIAL CAR JOURNAL
NOVEMBER, 1939



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GREATER PROFITS

Cost sheets tell the story! Net savings of over \$15,000.00 per truck. An achievement of Sterling Diesel powered motor trucks—trucks which have traveled in excess of one-half million miles and are still in operation.

Be sure of maximum returns on investment. Select Sterling motor trucks for superior performance and lower operating costs. Write for full information.

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MILWAUKEE, WISCONSIN

JONES PORTABLE TACHOMETER



The world's largest operators of commercial vehicles use Jones Portable Tachometers to check engine speeds for tune-ups, and setting governors, etc. Here are a few: Standard Oil Co., of La., N. J., N. Y.; Shell Petroleum Co., Atlantic Refining Company, Tidewater Company, Keeshin Motor Express, Mack Trucks, Brockway, U. S. Navy.

Direct, instantaneous reading

JONES-MOTROLA-STAMFORD, CONN.
432 FAIRFIELD AVENUE

It's Easy to Recondition

Vacuum Power Brake Cylinders and Valves

10 different kits to fit popular types of B-K Units

Write for Free Catalog 16-A

Power Brake Parts Mfg. & Sales Co.
4418 Woodward Ave., Detroit, Mich.

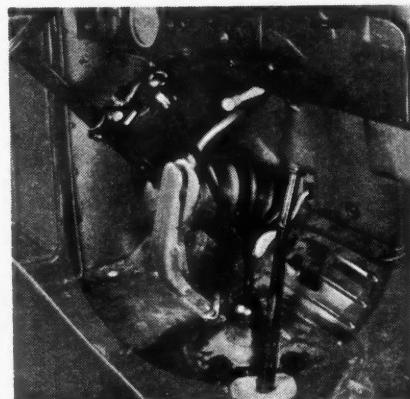
(CONTINUED FROM PAGE 177)
wear-adjustable forks. When the brake is applied the inner and outer shoes are drawn together, gripping the drum on both the inner and outer surfaces.

An outstanding feature is greatly increased lining life and smoother brake application due to rapid dissipation of heat. More than two-thirds of the drum surface is exposed, and the brake is cooled by the impeller action of slotted holes drilled through the web of the drum. This cooling effect, increases lining life and eliminates drum scoring, and makes increased applications without fading possible.

Another feature is quick replacement. This is accomplished by the use of interchangeable shoes which can be installed in about 20 minutes.

Porter Power Brake

A new Porter power brake consists of a simple rubber bellows with piston-operated valve attached to the brake pedal. There is no other mechanism and the device utilizes vacuum power to increase the pedal pressure about 300 per cent.



Thus it is possible to get a 200 lb. braking effort with 50 lb. foot pressure. One size fits all trucks and any type of brake mechanism. General Power Devices Co., 21813 Gratiot Ave., East Detroit, Mich., is the maker.

Johnson Solder Flux

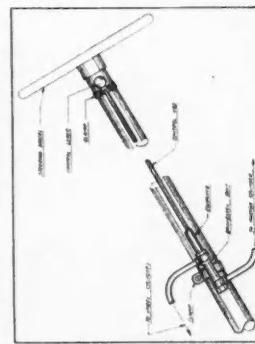
A new, fast acting flux that is claimed to speed up silver and hard solder applications where low temperatures are essential has been recently put on the market by the Lloyd S. Johnson Co., 2241 Indiana Ave., Chicago, Ill., bearing the trade name, "Lloyd's No. 7 Silver and Hard Solder Flux." The new flux is said not to break down at high temperatures.

Tin-Ezy, a compound manufactured by the Johnson Co. for the tinning of sheet steel, has been improved to a point where it will now tin sheet aluminum.

FLEET OWNERS AND DRIVERS —

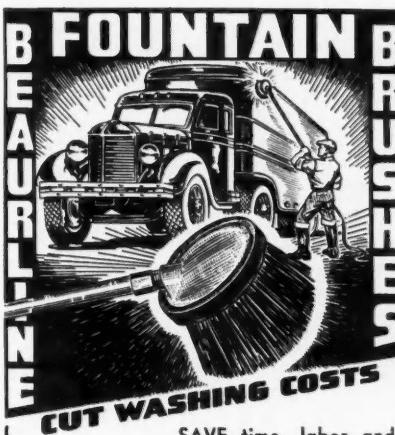
Here's a new brake lock—hill holder—emergency brake and safety unit which operates by simply pressing a button. Eliminates tugging at hand brake lever for frequent stops.

A hundred thousand trucks will be equipped with this brake lock during 1940.



MONARCH GOVERNOR COMPANY

Detroit, Michigan
GOVERNORS • MIRRORS • ANTENNAS • BRAKE LOCKS



CUT WASHING COSTS

SAVE time, labor and washing materials. Clean your fleets the modern Beaurline Way—using its fountain-type brush for cleaning and rinsing in one easy operation. Reduce time—use less materials—get more trucks cleaned—at much lower cost. BEAURLINE is the standard of leading fleet owners.

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BORG-TEMPLETON CORP.
2010 Maple Ave.—EVANSTON, ILL.
Successors to Beaurline Fountain Brush Co.



DENMAN TIRES

DENMAN TIRE AND RUBBER CO., WARREN, OHIO

Unless you see "Recap Indicator," you're missing THE money-saving sensation of the tire world! Write.

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